ANALYSIS

OF

BACON'S ADVANCEMENT OF LEARNING.

WITH A COMPLETE COURSE OF EXAMINATION-QUESTIONS

AND SPECIMENS OF EXAMINATION-PAPERS.

Designed for the Use of Private Students and Candidates for the University Local and Government Examinations, Military and Civil.

BY

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PREFACE.

THIS Analysis of BACON'S 'Advancement of Learning' is based upon the Text Books at present in use, viz. MARKBY'S edition (LONGMANS & Co.), WRIGHT'S edition (CLARENDON Press), and KITCHIN'S edition (BELL & Co.).

It is not intended as a substitute for these Text Books, but as subsidiary to their use.

Though doubtless it is desirable that the student should make his own analysis, yet in this special case the difficulties of BACON'S style and phraseology preclude the attempt on the part of many readers.

The aim of the writer has been to make this Analysis neither too copious nor too meagre.

Hence, for most of the illustrations the student must consult his Text Book.

The most peculiar words used by BACON are given with their meanings annexed.

Definitions or their equivalents are given in BACON'S own words, with explanations where needed.

Latin phrases are given in English where necessary or desirable.

The tabular schemes belonging to each book have been broken up in detail to meet the various sections to which they belong.

In many places, where obscurity prevails, the Analysis has been worked from the *De Augmentis Scientiarum*, the treatise in nine books on the *Advancement of Learning*, greatly expanded and carefully corrected, which BACON published nearly twenty years later.

The English has been made as easy and consecutive as possible, for the purpose not only of specially assisting the student, but of encouraging the general reader, who may wish with less effort to get some general impression of the scope of BACON's work.

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ANALYSIS

OF

BACON'S ADVANCEMENT OF LEARNING.

INTRODUCTION.

I.

THE BACONIAN PHILOSOPHY.

(Hallam's Introduction to the Literature of Europe, vol. iii. p. 24.)

1. It is not exactly known at what age Bacon first conceived the scheme of a comprehensive philosophy, but it was, by his own account, very early in life. Such noble ideas are most congenial to the sanguine spirit of youth, and to its ignorance of the extent of labour it undertakes. In the dedication of the *Novum Organon* to James in 1620, he says that he had been about some such work near thirty years ago, 'so as I made no haste. And the reason,' he adds, 'why I have published it now, specially being imperfect, is, to speak plainly, because I number my days, and would have it saved. There is another reason of my so doing, which is to try whether I can get help in one intended part of this work, namely, the compiling of a natural and experimental history, which must be the main foundation of a true and active philosophy.' He may be presumed at least to have made a very considerable progress in his undertaking before the close of

Time of its conception.

the sixteenth century. But it was first promulgated to the world by the publication of his *Treatise on the Advancement of Learning*, in 1605. In this, indeed, the whole of the Baconian philosophy may be said to be implicitly contained, except, perhaps, the second book of the *Novum Organon*. In 1623 he published his more celebrated Latin translation of this work, if it is not rather to be deemed a new one, entitled *De Augmentis Scientiarum*. I find upon comparison, that more than two-thirds of this treatise are a version, with slight interpolation or omission, from the *Advancement of Learning*, the remainder being new matter.

Instauratio Magna.

2. The *Instauratio Magna* had been already published in 1620, while Lord BACON was still chancellor. Fifteen years had elapsed since he gave to the world his *Advancement of Learning*, the first-fruits of such astonishing vigour of philosophical genius, that, inconceivable as the completion of the scheme he had even then laid down in prospect for his new philosophy by any single effort must appear, we may be disappointed at the great deficiencies which this latter work exhibits, and which he was not destined to fill up. But he had passed the interval in active life and in dangerous paths, deserting, as in truth he had all along been prone to do, the 'shady spaces of philosophy,' as MILTON calls them, for the court of a sovereign, who, with some real learning, was totally incapable of sounding the depths of Lord BACON's mind, or even of estimating his genius.

Course of studying Lord Bacon.

3. The best order of studying the Baconian philosophy would be to read attentively the *Advancement of Learning*: next to take the treatise *De Augmentis*, comparing it all along with the former; and afterwards to proceed to the *Novum Organon*. A less degree of regard has usually been paid to the *Centuries of Natural History*, which are the least important of his writings, or even to the other

philosophical fragments, some of which contain very excellent passages; yet such in great measure as will be found substantially in other parts of his works. The most remarkable are the *Cogitata et Visa*. It must be said that one who thoroughly venerates Lord BACON will not disdain his repetitions, which sometimes by variation of phrase throw light upon each other. It is generally supposed that the Latin works were translated from the original English by several assistants, among whom GEORGE HERBERT and HOBBES have been named, under the author's superintendence. The Latin style of these writings is singularly concise, energetic, and impressive, but frequently crabbed, uncouth, and obscure. So that we read with more admiration of the sense than delight in the manner of delivering it. But RAWLEY, in his life of BACON, informs us that he had seen about twelve autographs of the *Novum Organon*, wrought up, and improved year by year till it reached the shape in which it was published, and he does not intimate that these were in English, unless the praise he immediately afterwards bestows on his English style may be thought to warrant that supposition. I do not know that we have positive evidence as to any of the Latin works being translations from English except the treatise *De Augmentis*.

II.

SKETCH OF THE TREATISE 'DE AUGMENTIS SCIENTIARUM.'

(Hallam's Introd. to the Literature of Europe, vol. iii. p. 36.)

1. THE *Advancement of Learning* is divided into two books only: the treatise *De Augmentis Scientiarum* into nine. The first of these in the latter is introductory, and designed to remove prejudices against the search after truth, by indicating the causes which had hitherto obstructed it. In the

second book he lays down his celebrated partition of human learning into History, Poetry, and Philosophy, according to the faculties of the mind respectively concerned in them; the *memory*, *imagination*, and *reason*.

History.

2. HISTORY is natural or civil, under the latter of which ecclesiastical and literary histories are comprised. These again fall into regular subdivisions, all of which he treats in a summary manner and points out the deficiencies which ought to be supplied in many departments of history.

Poetry.

3. POETRY succeeds in the last chapter of the same book, but by confining the name to fictitious narrative, except as to ornaments of style, which he refers to a different part of his subject, he much limited his views of that literature, even if it were true, as it certainly is not, that the imagination alone, in any ordinary use of the word, is the medium of political emotion. The word *emotion*, indeed, is sufficient to show that BACON should either have excluded poetry altogether from his enumeration of sciences and learning, or taken into consideration other faculties of the soul than those which are merely intellectual.

Dugald Stewart.

4. STEWART has praised with justice a short but beautiful paragraph concerning poetry (under which title may be comprehended all the various creations of the faculty of imagination at least as they are manifested by words,) wherein BACON 'has exhausted everything that philosophy and good sense have yet had to offer on the subject of what has since been called the *beau idéal*.' The same eminent writer and admirer of BACON observes that D'ALEMBERT improved upon the Baconian arrangement by classing the fine arts together with poetry. Injustice has been done to painting and music, especially the former, when, in the fourth book *De Augmentis* they were counted as mere *artes voluptariæ* subordinate to a sort of Epicurean gratifi-

cation of the senses, and only somewhat more liberal than cookery or cosmetics.

5. In the third book, science having been divided into theological and philosophical, and the former, or what regards revealed religion, being postponed for the present, he lays it down that all philosophy relates to God, or to nature, or to man. Natural Theology and Metaphysics.

6. Under NATURAL THEOLOGY, as a sort of appendix, he reckons the science or theory of angels and superhuman spirits; a more favourite theme, especially as treated independently of revelation, in the ages that precede Lord BACON than it has been since.

7. NATURAL PHILOSOPHY is speculative or practical, the former divided into *Physics*, in a particular sense, and *Metaphysics*, 'one of which inquireth and handleth the material and efficient causes; the other handleth the formal and final causes.' Hence Physics dealing with particular instances, and regarding only the effects produced, is precarious in its conclusions, and does not reach the stable causes of causation.

> 'Limus ut hic durescit, et hæc ut cera liquescit
> Uno eodemque igni.'

8. METAPHYSICS, to which word he gave a sense as remote from that which it bore in the Aristotelian schools as from that in which it is commonly employed at present, had for its proper object the *investigation of forms*. It was 'a generally received and inveterate opinion, that the inquisition of man is not competent to find out essential forms, or true differences.' 'Formæ inventio,' he says in another place, 'habetur pro desperata.' The word *form* itself, being borrowed from the old philosophy, is not immediately intelligible to every reader. 'In the Baconian sense,' says Playfair, '*form* differs only from cause in being' What is Form?

permanent, whereas we apply cause to that which exists in order of time.' *Form* (*natura naturans*, as it was barbarously called), is the general law, or condition of existence in any substance or quality (*natura naturata*) which is wherever its form is. The conditions of a mathematical figure, prescribed in its definition, might in this sense be called its form, if it did not seem to be Lord BACON's intention to confine the word to the laws of particular sensible existences. In modern philosophy it might be defined to be that particular combination of forces which impresses a certain modification upon matter subjected to their influence.

Form of bodies might sometimes be inquired into.

9. To a knowledge of such forms or laws of essence and existence, at least in a certain degree, it might be possible, in BACON's sanguine estimation of his own logic, for man to attain. Not that we could hope to understand the forms of complex beings, which are almost infinite in variety, but the simple and primary natures, which are combined in them. 'To inquire the form of a lion, of an oak, of gold, nay, of water, of air, is a vain pursuit; but to inquire the forms of sense, of voluntary motion, of vegetation, of colours, of gravity and levity, of density and tenuity, of heat, of cold, and all other natures and qualities, which, like an alphabet, are not many, and of which the essences, upheld by matter of all creatures, do consist; to inquire, I say, the true forms of these is that part of METAPHYSICS which we now define of.'

Thus in the words he soon afterwards uses, 'Of natural philosophy, the basis is natural history; the stage next the basis is *Physic*; the stage next the vertical point is *Metaphysic*. As for the vertical point, "*Opus quod operatur Deus a principio usque ad finem*," the summary law of nature, we know not whether man's inquiry can attain unto it.' (*Advancement of Learning*, book ii. 1.)

10. The *second* object of METAPHYSICS, according to BACON's notion of the word, was *the investigation of final*

causes. It is well known that he has spoken of this in Physics with unguarded disparagement. 'Like a virgin consecrated to God, it bears nothing,' one of those witty conceits, that sparkle over his writings, but will not bear a severe examination. It has been well remarked that, almost at the moment he published this, one of the most important discoveries of his age, the circulation of the blood, had rewarded the acuteness of HARVEY in reasoning on the final cause of the valves in the veins.

Final causes too much slighted.

11. NATURE or PHYSICAL PHILOSOPHY, according to Lord BACON's partition, did not comprehend the human species. Whether this be not more consonant to popular language, adopted by preceding systems of philosophy, than to a strict and perspicuous arrangement, may by some be doubted, though a very respectable authority, that of DUGALD STEWART, is opposed to including Man in the province of Physics. For it is surely strange to separate the physiology of the human body, as quite a science of another class, from that of inferior animals; and if we place this part of our being under the department of physical philosophy, we shall soon be embarrassed by what BACON has called the *doctrina de fœdere*, the science of the connection between the soul of man and his bodily frame, a vast and interesting field, even yet very imperfectly explored.

Man not included in physics

12. It has pleased, however, the author to follow his own arrangement. The *Fourth Book* relates to the constitution, bodily and mental, of mankind.

Man in body and mind.

In this book he has introduced several subdivisions which, considered merely as such, do not always appear the most philosophical; but the pregnancy and acuteness of his observations under each head silence all criticism of this kind. This book has nearly double the extent of the corresponding pages in the *Advancement of Learning*. The doctrine as to the substance of the thinking principle having been very slightly touched, or rather passed over,

with two curious disquisitions on Divination and Fascination, he advances in four ensuing books, to the intellectual and moral faculties, and those sciences which immediately depend upon them.

13. LOGIC and ETHICS are the grand divisions correlative to the *reason* and *will* of man.

Logic.

LOGIC, according to Lord BACON, comprises the sciences of inventing, judging, retaining, and delivering the conceptions of the mind.

We invent, *i.e.*, discover new arts or new arguments; we judge by induction a syllogism; the memory is capable of being aided by artificial methods. All these processes of the mind are the subjects of several sciences, which it was the peculiar aim of BACON, by his own logic, to place on solid foundations.

Extent given to it by Bacon.

14. It is here to be remarked that the sciences of LOGIC and ETHICS, according to the partitions of Lord BACON, are far more extensive than we are accustomed to consider them. Whatever concerned the human intellect came under the first; whatever related to the will and affections of the mind fell under the head of ethics. '*Logica de intellectu et ratione de voluntate, appetitu, et affectibus disserit; altera decreta, altera actiones progignit.*' But it has been usual to confine Logic to the methods of guiding the understanding in the search for truth; and some, though, as it seems to me, in a manner not warranted by the best usage of philosophers, have endeavoured to exclude everything but the syllogistic mode of reasoning from the logical province. Whether, again, the nature and operations of the human mind in general ought to reckoned a part of Physics, has already been mentioned as a disputable question.

Grammar and Rhetoric.

15. The science of *delivering our own thoughts to others*, branching into Grammar and Rhetoric and including Poetry, so far as its proper vehicles, metre and diction, are

concerned, occupies the sixth book. In all this he finds more desiderata than, from the great attention paid to these subjects by the ancients, could have been expected. Thus his ingenious collection of *Antitheta*, or common-places in Rhetoric, though mentioned by CICERO as to the judicial species of eloquence, is first extended by BACON himself, as he supposes, to deliberative or political orations. I do not, however, think it probable that this branch of topics could have been neglected by antiquity, though the writings relating to it may not have descended to us; nor can we by any means say there is nothing of the kind in ARISTOTLE'S *Rhetoric*. Whether the utility of these common-places, when collected in books, be very great is another question. And a similar doubt might be suggested with respect to the Elenchs or refutations of Rhetorical Sophisms, or *colores boni et mali*, which he reports as equally deficient, though a commencement has been made by ARISTOTLE.

16. In the seventh book we come to ETHICAL SCIENCE. This he deems to have been insufficiently treated. He would have the different tempers and characters of mankind first considered, then their passions and affections (neither of which, as he justly observes, find a place in the *Ethics* of ARISTOTLE, though they are sometimes treated not so appositely in his *Rhetoric*); lastly, the methods of altering and affecting the will and appetite, such as custom, education, imitation, or society. 'The main and primitive division of moral knowledge seemeth to be into the exemplar or platform of good and the regiment or culture of the mind. The one describing the nature of good, the other presenting rules how to subdue, apply, and accommodate the will of man thereunto.' This latter he also calls the 'Georgics of the mind.' He seems to place 'the platform or essence of good' in seeking the good of the whole rather than that of the individual, applying this to refute the ancient theories as to the *summum bonum*. But perhaps BACON had not thoroughly disentangled this question, Ethics.

and confounds, as is not unusual, the *summum bonum*, or personal felicity, with the object of moral action or *commune bonum*. He is right, however, in preferring, morally speaking, the active to the contemplative life against ARISTOTLE and other philosophers.

This part is translated in *De Augmentis*, with little variation from the *Advancement of Learning*, as also what follows on the Georgics or culture of the mind.

Civil life.

17. The PHILOSOPHY OF CIVIL LIFE, as it relates both to the conduct of men in their mutual intercourse, which is peculiarly termed prudence, and to that higher prudence which is concerned with the administration of communities, fills up the chart of the Baconian Ethics.

18. In the Eighth Book admirable reflections on the former of these subjects occur at almost every sentence. Many, perhaps most of these, will be found in the *Advancement of Learning*. But in this he had been for a reason sufficiently obvious and almost avowed, cautiously silent upon the art of government, the craft of his king.

Politics.

19. The motives for silence were still so powerful that he treats in the *De Augmentis* only of two heads in political science; the methods of enlarging the boundaries of a State, which JAMES I. could hardly resent as an interference with his own monopoly, and one of far more importance to the well-being of mankind, the principles of universal jurisprudence, or rather of universal legislation, according to which standard all law ought to be framed. These he has sketched in ninety-seven aphorisms, or short rules, which from the great experience of BACON in the laws as well as his peculiar vocation towards that part of philosophy, deserve to be studied at this day. Upon such topics the progressive and innovating spirit of his genius was less likely to be perceived; but he is here, as on all occasions, equally free from what he has happily called in one of his Essays, the

'froward retention of custom,' the prejudice of mankind, like that of perverse children, against what is advised to them for their real good and what they cannot deny to be conducive to it. This whole eighth book is pregnant with profound and original thinking.

Theology

20. The ninth and last, which is short, glances only at some desiderata in THEOLOGICAL SCIENCE, and is chiefly remarkable as it displays a more liberal and catholic spirit than was often to be met with in a period signalised by bigotry and ecclesiastical pride. But as the abjuration of human authority is the first principle of Lord BACON's philosophy and the preparation for his Logic, it was not expedient to say too much of its usefulness in theological pursuits.

Desiderata enumerated by him.

21. At the conclusion of the whole, we may find a summary catalogue of the deficiencies which in the course of this ample review Lord BACON had found worthy of being supplied by patient and philosophical inquiry. Of those desiderata, few, I fear, have since been filled up, at least in a collective and systematic manner, according to his suggestions. Great materials, useful intimations, and even partial delineations are certainly to be found, as to many of the rest, in the writings of those who have done honour to the last two centuries. But with all our pride in modern science, very much of what even in BACON's time was perceived to be wanting, remains for the diligence and sagacity of those who are yet to come.

III.

THE METHOD OF BACON AND THE OBJECTS OF HIS PHILOSOPHICAL WRITINGS.

(Hallam's Introduction to the Literature of Europe, vol. iii. p. 30.)

1. THE leading principles of the Baconian philosophy are contained in the *Advancement of Learning*. These are amplified, corrected, illustrated and developed in the treatise *De Augmentis Scientiarum*, from the fifth book of which, with some help from other parts, is taken the first book of the *Novum Organon*, and even a part of the second. I use this language because though earlier in publication I conceive that the *Novum Organon* was later in composition. All that very important part of this fifth book which relates to *Experientia Litterata*, or *Venatio Panis* as he calls it, and contains excellent rules for conducting experiments in natural philosophy, is new, and does not appear in the *Advancement of Learning*, except by way of promise of what should be done in it. Nor is this at least so fully and clearly to be found in the *Novum Organon*. The second book of this latter treatise he professes not to anticipate. '*De Novo Organo silemus*,' he says, '*neque de eo quicquam prælibamus*.' This can only apply to the second book, which he considered as the real exposition of his method after clearing away the fallacies which form the chief subject of the first. Yet what is said of *Topica particularis* in this fifth book *De Augmentis* (illustrated by 'articles of inquiry concerning gravity and levity') goes entirely on the principles of the second book of the *Novum Organon*.

Logical induction.

2. Let us now see what Lord BACON's *method* really was. He has given it the name of *Induction*, but carefully distinguishes it from what bore that name in the old Logic, *i.e. an inference from a perfect enumeration of particulars*

to a general law of the whole. For such an enumeration, though of course conclusive, is rarely practicable in nature, where the particulars exceed our powers of numbering. Nor again is the Baconian method to be confounded with the less complete form of the Inductive process, viz., *inferences from partial experience in similar circumstances*, though this may be a very sufficient ground for *practical*, which is *probable*, knowledge. His own method rests on the same general principle, namely *the uniformity of the laws of nature*, so that in certain conditions of phenomena the same effects or the same causes may be assumed; but it endeavours to establish these laws on a more exact and finer process of reasoning than partial experience can effect. For the recurrence of antecedents and consequents does not prove a necessary connexion between them unless we can exclude the presence of all other conditions which may determine the event. Long and continued experience of such a recurrence, indeed, raises a *high probability* of a necessary connexion; but *the aim of Bacon was to supersede experience in this sense*, and to find a shorter road to the result; and for this his *methods of exclusion* are devised, as complete and accurate a collection of facts, connected with the subject of inquiry, as possible, is to be made out by means of that copious Natural History which he contemplated, or from any other good sources. These are to be selected, compared, and scrutinised, according to the rules of natural interpretation delivered in the second book of the *Novum Organon*, or such other as he designed to add to them; and if experiments are admissible, these are to be conducted according to the same rules.

Bacon's inductive method.

Experience and *observation* are the guides through the Baconian Philosophy, which is the handmaid and interpreter of nature.

Experience and observation.

3. When Lord BACON *seems to decry experience*, which in certain passages he might be thought to do, it is the *particular* and *empirical observation* of individuals, from

What kind of experience Bacon decried

which many rash generalisations had been drawn, as opposed to that founded on an accurate natural history. Such hasty inferences he reckoned still more pernicious to true knowledge than the sophistical methods of the current philosophy; and in a remarkable passage, after censuring the precipitancy of empirical conclusions in the chemists, and in GILBERT'S *Treatise on the Magnet*, utters a prediction that if ever mankind, excited by his counsels, should seriously betake themselves to seek the guidance of experience, instead of relying on the dogmatic schools of the sophists, the proneness of the human mind to snatch at general axioms would expose them to much risk of error from the theories of this superficial class of philosophers.

Bacon's dislike of Aristotle.

4. The indignation, however, of Lord BACON is more frequently directed against the predominant philosophy of his age, that of ARISTOTLE and the Schoolmen. Though he does justice to the great abilities of the former, and acknowledges the exact attention to facts displayed in his *History of Animals*, he deems him one of the most eminent adversaries to the only method that can guide us to the real laws of nature. The old Greek philosophers, EMPEDOCLES, LEUCIPPUS, ANAXAGORAS, and others of their age, who had been in the right track of investigation, stood much higher in the esteem of BACON than their successors, PLATO, ZENO, ARISTOTLE, by whose lustre they had been so much superseded that both their works have perished and their tenets are with difficulty collected. These more distinguished leaders of the Grecian schools were in his eyes little else than disputatious professors (it must be remembered that he had in general only physical science in his view) who seemed to have it in common with children, *ut ad garriendum prompti sint, generare non possint*; so wordy and barren was their miscalled wisdom.

Bacon's method much needed.

5. Those who object to the importance of Lord BACON'S precepts in philosophy, *that mankind have practised* many

of them immemorially, are rather confirming their *utility* than taking off much from their *originality* in any fair sense of that term. Every logical method is built on the common faculties of human nature, which have been exercised since the creation in discerning better or worse, truth from falsehood, and inferring the unknown from the known. That men might have done this more correctly is manifest from the quantity of error into which, from want of reasoning well on what came before them, they have habitually fallen. In experimental philosophy, to which the more special rules of Lord BACON are generally referred, there was a notorious want of that very process of reasoning which he has supplied. It is more than probable, indeed, that the great physical philosophers of the seventeenth century would have been led to employ some of his rules, had he never promulgated them; but I believe they had been little regarded in the earlier period of science. It is also a very defective view of the Baconian method to look only at the experimental rules given in the *Novum Organon.* The preparatory steps of completely exhausting the natural history of the subject of inquiry by a patient and sagacious consideration of it in every light are at least of equal importance and equally prominent in the Inductive Philosophy.

Objects of the Baconian philosophy.

6. The *first object* of Lord BACON'S philosophical writings is to prove their *own necessity*, by giving an unfavourable impression as to the actual state of most sciences, in consequence of the prejudices of the human mind, and of the mistaken methods pursued in their cultivation. The *second* was to point out a better prospect for the future. One of these occupies the treatise *De Augmentis Scientiarum* and the first book of the *Novum Organon.* The other, besides many anticipations in these, is partially detailed in the second book, and would have been more thoroughly developed in those remaining portions which the author did not complete.

IV

BACON'S STYLE AND INTELLECTUAL CHARACTER

(Shaw's Outlines of English Literature, 1849, pp. 89–92.)

Bacon's perfect command of language.

1. In reading BACON, either in his vernacular or more learned dress, we feel perpetually conscious of a peculiarity inevitably accompanying the highest genius in its manifestations,—we mean that in him the language seems always the flexible and obedient instrument of thought; not as it is in the productions of a lower order of mind, its rebellious and recalcitrant slave. All authors below the greatest seem to use the mighty gift of expression with a certain secret timidity, lest the lever should prove too ponderous for the hand that essays to wield it; or rather they resemble the rash student in the old legend, who was overmastered by the demon which he had unguardedly evoked.

Striking use of forcible and appropriate metaphors.

2. There is, perhaps, no author so *metaphorical* as BACON: his whole style is saturated with metaphor: the very titles of his books are frequently nothing else but metaphors of the boldest character; and yet there is not one of these figures of speech by which we do not gain a more vivid, clear, and rapid conception of the idea which he desires to convey. With him, such expressions, however beautiful, are *never merely ornamental*: like some of the most exquisite decorations of Grecian and of Gothic architecture, what appears introduced into the design for the mere purpose of adornment will ever be found, when closely examined, to give strength and stability to the structure, of which it seems to inexperienced eyes a mere ornamental and unnecessary adjunct.

Answer to the objection that

3. It would be superfluous here to devote more than a passing notice to one objection, which has been brought

against the ORIGINALITY of the Baconian system of philosophy, and against the importance of the reformation which it produced in human science. The methods recommended by BACON, say the objectors, have always been more or less in use from the very infancy of human knowledge. The art of Induction and of advancing from particular to general cases in the investigation of the laws of nature was certainly employed, and repeatedly insisted on long before the Verulamian method was in existence. We have in another place strongly insisted on the absurdity of considering BACON as an inventor in the proper sense of the word: what he did *was not to teach us a philosophy*, but to show us HOW TO PHILOSOPHISE; and the immeasurable importance of what he did will best be appreciated by a simple comparison of the progress made in real knowledge during the *twenty-two centuries* which have elapsed since the time of ARISTOTLE, and the acquisitions made in the two hundred and nineteen years since the death of BACON.

Bacon was not *original*.

Bacon taught us not a philosophy, but how to philosophise.

4. It is quite true that BACON, as he was not a discoverer in the art of investigating truth in general, so neither did he make any specific discoveries in any particular department of science. He was not a mathematician, nor an astronomer, nor a naturalist, nor a metaphysician; and in this respect we might be disposed to echo the ironical criticism of his contemporary HARVEY, who, competent enough himself to perceive BACON'S deficiency in the practical and technical parts of natural science, complained that the author of the *Instauratio* 'wrote philosophy like a Lord Chancellor.' No! the true obligation which the human race must ever feel to the latest generations to BACON, is, *that he did perhaps what no man else was ever sufficiently gifted to do*: that seated as it were on the pinnacle of his sublime genius, *he saw distinctly* and *mapped out accurately all that can ever be an object of human investigation*; that his far-darting and all-embracing intellectual vision took in at once the whole of the domains of

Bacon not a discoverer.

What Bacon really did for science and mankind.

philosophy; nay, that it penetrated into the obscurity which brooded over the distant and unexplored regions of the vast country of the mind, and traced with prophetic sagacity, the paths that must be followed by future discoverers in ages yet unborn.

Bacon not free from the prejudices and errors of his time.

5. With his own notions on physical subjects there were mingled many of the prejudices and erroneous ideas prevalent in his day; but such is the essential and invariable justness of the rules which he has laid down for the conduct of investigation, that these false conclusions may be swept away, and replaced by facts more accurately observed, without any weakening of the system which he originated. To apply the admirable comparison of COWLEY, BACON, though himself not free from the errors of his time, yet clearly foresaw the gradual disappearance of those errors:

> BACON, like MOSES, led us forth at last:
> The barren wilderness he passed,
> Did on the very border stand
> Of the bless'd promis'd land,
> And from the *Pisgah-height of his exalted wit*
> Saw it himself and showed us it.

His writings remarkable for common sense.

6. At the same time, gifted as he was with 'the vision and the faculty divine,' by which he could thus anticipate centuries, and behold 'not as through a glass darkly, but face to face,' sciences which had no existence when he wrote, nothing is more admirable than the COMMON SENSE which distinguished BACON'S divine intelligence. The *ruling* and *vital principle*—the *very life-blood of the new philosophy*—is the *necessity of accurate and complete observation of nature, anterior and preliminary* to any *attempt at theorising and drawing conclusions.*

The ruling principle of the new philosophy.

7. Yet though he was the *apostle of experiment and observation*, he has no less foreseen and warned us against the ill effects that would follow the rash generalisation founded upon *particular* and *imperfect observation*—effects

which have been very perceptible in modern science, and which have tended to give to the *knowledge* of *later days* an air *of superficiality* little less dangerous than the more visionary and sophistical tone which characterises the ancient systems.

The spirit of utility which pervades Bacon's philosophy

8. But, above all, what strikes us as the most admirable peculiarity of BACON'S philosophy is the spirit of UTILITY which runs through, and modifies the whole design. We do not mean *utility* in the low and limited sense of a care for the development of man's merely physical comforts and advantages: the highest exercise and cultivation of the higher faculties of our being, the enlarging the sphere of intellectual pleasures, the strengthening of our moral obligations, the refining and elevating of our perception of the beautiful—all these BACON has treated and would have exhausted, had they not been as infinite as the soul itself. On many of these subjects—on the *beau ideal* for example—it will be hardly too much to say, that he has left nothing for future generations.

His writings, though terse, not apophthegmatic.

9. Another peculiarity which we cannot forbear noticing, as forming one of the striking features of BACON'S intellectual character, is the circumstance that his writings will not be found in any high degree *apophthegmatic*—that is, the reader will not be likely to meet with many of those short, extractable and easily remembered sentences, or *gnomai*, which pass from mouth to mouth as weighty maxims, or separate masses of truth—the gold coin, if we may so style them, of the intellectual exchange. Many such are undoubtedly to be found in his pages, but they are certainly less plentiful in BACON, than in other great writers; but we shall generally find these passages so embedded and fixed in the argument of which such propositions form a part as not to be extracted without manifest loss to their value and significancy.

A close study of Bacon's writings recommended as beneficial.

10. In consequence of this, BACON is one of those authors who must be *read through* to be correctly judged and worthily appreciated. Nor will any aspiring and truly generous mind begrudge the labour which will attend this exercise of the highest faculties with which GOD has endowed it: it is surely no mean privilege to be thus admitted into the laboratory and workshop of the new philosophy, and to behold—no indifferent spectator—the sublime alchemy by which *experience* is transmuted into *truth*.

V.

PARTITIONS (OR CLASSIFICATION) OF THE SCIENCES.

SINCE BACON'S time the problem of a general classification of all knowledge has presented itself to many minds, and several attempts have been made to devise an accurate system which shall adequately embrace the present development of science.

These attempts are ably reviewed in a pamphlet published by the late Sir JOHN W. LUBBOCK, F.R.S. (1838). He gives a brief sketch of:

The system of BACON—system of D'ALEMBERT—system of LOCKE—system of BENTHAM—system of CHAMBERS in the Introduction to his Cyclopædia—system of AMPÈRE—system of the *Encyclopædia Metropolitana*, and a system proposed by himself.

The importance of the subject commends itself for two reasons—(i) The advantage to be obtained by gaining a clear insight into the relations of the various branches of human knowledge; (ii) The utility of a good classification for the purpose of Encyclopædias and Libraries.

The various schemes previously explained by Sir J. LUBBOCK are unfolded in the Appendix to his pamphlet, and with reference to them we may briefly state the following.

Dugald Stewart.

In consequence of the progress of science, the divisions which were formerly proposed by BACON and D'ALEMBERT are not suited to its present condition. DUGALD STEWART intended, in the Preliminary Dissertation to the *Encyclopædia Britannica*, to have begun with a general survey of the various departments of human knowledge. He thought that it would be easy to adapt the intellectual map of BACON and D'ALEMBERT to the present advanced state of the sciences; but upon a closer examination of their labours, the illustrious philosopher found himself under the necessity of abandoning the design from doubts with respect to the *justness of their logical views* which terminated unfortunately only in a conviction that these views are radically and essentially erroneous.

DUGALD STEWART remarks: 'Instead therefore of endeavouring to give additional currency to speculations which I conceived to be fundamentally unsound, I resolved to point out their most important defects—defects which I am nevertheless very ready to acknowledge it is more easy to remark than to supply. The strictures which I shall have to offer on my predecessors will at the same time account for my forbearing to substitute a new map of my own instead of that to which the names of BACON and D'ALEMBERT have lent so great and so well merited a celebrity; and may perhaps suggest a doubt whether the period be yet arrived for hazarding again, with any reasonable prospect of success, a repetition of their bold experiment.'

In another place he says: 'In examining the details of BACON'S survey, it is impossible not to be struck (more especially when we reflect on the state of learning two hundred years ago) with the minuteness of his information, as well as with the extent of his views, or to forbear admiring his sagacity in pointing out to future adventurers the unknown tracks still left to be explored by human curiosity. If his classifications be sometimes artificial and

arbitrary, they have at least the merit of including under one head or another every particular of importance, and of exhibiting these particulars with a degree of method and of apparent connection, which, if it does not always satisfy the judgment never fails to interest the fancy, and to lay hold of the memory. Nor must it be forgotten, to the glory of his genius, that what he failed to accomplish remains to this day a desideratum in science; that the intellectual chart delineated by him is, with all its imperfections, the only one of which modern philosophy has got to boast.'

D'Alembert.

The following is D'ALEMBERT'S statement of BACON'S leading ideas :—

'The objects about which our minds are occupied are either *spiritual* or *material*, and the media employed for this purpose are our ideas, either directly received, or derived from reflection. The system of our direct knowledge consists entirely in the passive and mechanical accumulation of the particulars it comprehends; an accumulation which belongs exclusively to the province of MEMORY. REFLECTION is of two kinds, according as it is employed in *reasoning* on the objects of our direct ideas, or in *studying* them as models for imitation.

'Thus MEMORY, REASON, strictly so called and IMAGINATION are the three modes in which the mind operates on the subjects of its thoughts. By Imagination, however, is here to be understood, not the faculty of conceiving or representing to ourselves what we have previously perceived, a faculty which differs in nothing from the memory of those perceptions, and which, if it were not relieved by the invention of signs, would be in a state of continual exercise. The power which we denote by this name has a nobler province allotted to it, that of rendering imitation subservient to the creations of genius.

'These three faculties suggest a corresponding division of human knowledge into three branches: 1. HISTORY,

which derives its materials from MEMORY; 2. PHILOSOPHY, which is the product of REASON; and 3. POETRY (comprehending under this name all *the fine Arts*) which is the offspring of the IMAGINATION.

'Different faculties which are attributed to the mind, such as, *Consciousness*, *Conception*, *Classification* and *Abstraction*, are indirectly included under this division of BACON. But MEMORY, REASON, and IMAGINATION must be considered as arranged *circularly;* that is to say, MEMORY and IMAGINATION are not more widely separated from each other than they are from REASON; so that I conceive the order in which they follow each other is indifferent.'

All branches of knowledge may be considered as resulting from the combination of many elementary notions or ideas. Metaphysicians study particularly the nature of these elementary phenomena, or simplest manifestations of the human intellect; and BACON's distribution of the Arts and Sciences in reference to the intellectual faculties can only be true in relation to the proportion in which the elementary notions or simplest ideas combine to form any given art or science.

These most elementary notions, which are blended in all subdivisions of human knowledge, can be referred to three distinct faculties, MEMORY, REASON, IMAGINATION; because they consist in ideas either *remembered*, *reasoned*, or *imagined*. D'ALEMBERT, in his *Système Figuré des Connaissances Humaines*, has closely followed BACON. He places under NATURAL HISTORY, the History of Meteors, of the Earth and Sea, of Minerals, of Vegetables, of Animals, and of the Elements. But the History of Minerals does not differ from MINERALOGY, that of Vegetables from BOTANY, or that of Animals from ZOOLOGY, which are placed under *Physique Particulière*. Music, Painting, &c., are inserted under POETRY. Their insertion here is approved by DUGALD STEWART:—'The latitude given by D'ALEMBERT to the meaning of the word *Poetry*, is a real

and a very important improvement on BACON, who restricts it to *Fictitious History* or *Fables*.'

It is universally admitted that POETRY should be classed as one of the Fine Arts along with Music, Architecture, Sculpture, and Painting.

Locke.

LOCKE has given the following 'Division of the Sciences' in his work on the *Human Understanding*.

'All that can fall within the compass of human understanding, being either, *first*, the nature of things as they are in themselves, their relations and their manner of operation; or, *secondly*, that which man himself ought to do, as a rational and voluntary agent, for the attainment of any end, especially happiness; or, *thirdly*, the ways and means whereby the knowledge of both the one and the other of these is attained and communicated, I think *science* may be divided properly into these three sorts.

'PHYSICA.—First, the knowledge of things, as they are in their own proper beings, their constitution, properties, and operations; whereby I mean not only matter and body, but spirits also, which have their proper natures, constitutions, and operations, as well as bodies. This, in a little more enlarged sense of the word I call Φυσική, or *natural philosophy*. The end of this is bare speculative truth; and whatsoever can afford the mind of man any such, falls under this branch, whether it be God himself, angels, spirits, bodies, or any of their assertions, as numbers, and figure, &c.

'Secondly.—Πρακτική, the skill of rightly applying our own powers and actions for the attainment of things good and useful. The most considerable under this head is ETHICS, *which is the seeking out those rules and measures of human actions which lead to happiness, and the means to practise them.*

'Thirdly.—The third branch may be called Σημειωτική, or the *doctrine of signs*, the most usual whereof being

words, it is aptly enough termed also Λογική, LOGIC; the *business whereof is to consider the nature of signs the mind makes use of for the understanding of things, or conveying its knowledge to others.*'

Here SIR J. LUBBOCK remarks:

'LOCKE'S first division must be considered as including RELIGION, METAPHYSICS, MATHEMATICS, NATURAL PHILOSOPHY and NATURAL HISTORY. The second division is ETHICS, and the third, LOGIC. LOCKE appears to have adopted unconsciously the division which was generally adopted by the philosophers of ancient Greece, but DUGALD STEWART observes that, notwithstanding this authority in its favour, 'it is difficult to reconcile one's self to an arrangement, which, while it classes with Astronomy, with Mechanics, with Optics, and with Hydrostatics the strikingly contrasted studies of Natural Theology and the Philosophy of the Human Mind, disunites from the two last the far more congenial Sciences of ETHICS and LOGIC.'

M. COUSIN says: 'Je n'ai rien à dire de cette division, sinon qu'elle est assez vieille, évidemment arbitraire et superficielle, et bien inférieure à la division célèbre de BACON reproduite par D'ALEMBERT. J'ai même bien de la peine à me persuader que l'auteur de ce paragraphe ait connu la division de BACON. Je vois bien plutôt ici, comme dans le troisième livre sur les signes et les mots, le souvenir de la lecture de HOBBES.'

Leibnitz

LEIBNITZ'S divisions resemble those in D'ALEMBERT'S system, if we arrange them as follows: History, Theology, Intellectual Philosophy, Jurisprudence, Philology, Mathematical Philosophy, Physical Philosophy, Medicine.

Ampère.

In 1834, AMPÈRE published an elaborate system of classification in a work entitled 'Essai sur la Philosophie des Sciences, ou Exposition analytique d'une Classification naturelle de toutes les connaissances humaines.'

AMPÈRE objects that BACON, and those who have since

treated of the classification of sciences, have been content with assigning a place to groups of truths under those titles which usage has capriciously assigned to them; and he contends that it is necessary to begin by forming groups upon some more rational system, and by giving new names to the groups so formed. 'By so doing, symmetry may be gained, and I am willing to admit that the names in common use for different branches of Science may have been assigned capriciously, but I do not think that any attempt to make an entire change of nomenclature is likely to be attended with success, or to be of practical utility, nor does it seem expedient to disregard those divisions which are generally adopted.'

AMPÈRE is right. The extraordinary nomenclature he has devised effectually frustrates any good intention he may have had in view.

The Encyclopædia Metropolitana.

In the arrangement of the *Encyclopædia Metropolitana*, the Arts and Sciences are exhibited according to 'two sorts of relations. The first is that which the ideas or laws of the mind bear to each other; the second, that which they bear to the external world. On the former are built the PURE SCIENCES; on the latter, those which we call the *Mixed* and *Applied*.

'The PURE SCIENCES represent pure acts of the mind, and those only; whether employed in contemplating the forms under which things, in their first elements, are necessarily viewed and treated by the mind, or in contemplating the substantial *reality* of these things.

'Hence, in the pure sciences, arises the known distinction of *formal* and *real*; and of the first, some teach the elementary forms, which the mind necessarily adopts in the processes of reasoning; and others, those under which alone all particular objects can be grasped and considered by the mind, either as distinguishable in quantity and number, or as occupying parts of space. The *real* sciences, on the other hand, are conversant with the true

nature and existence, either of the created universe around us, or of the guiding principles within us in their various modifications and distinguishing movements; or, lastly, with the real nature and existence of the Great Cause of all. When we descend to the second order of relations, namely, those which we bear to the external world, Theory is immediately introduced; new sciences are formed, which, in contradistinction from the *Pure*, are called the *Mixed* and *Applied* Sciences.'

A great infirmity pervades all these attempts. Some are artificial, some are arbitrary, and some are simply convenient. None appear to proceed upon the lines of a pure *logical division.*

The writer presents the student with an endeavour to frame on this principle a comprehensive and just classification, adapted to the present state of knowledge. For this he was indebted to a friend many years ago, and he takes this opportunity of acknowledging the obligation.

THE FIRST BOOK OF THE PROFICIENCE AND ADVANCEMENT OF LEARNING DIVINE AND HUMAN.

To the King.

1. The Tribute of Duty and Present of Affection due from subjects to a king are compared to Sacrifice and Free-Will Offering, and avowing himself not wanting in the former, Bacon contemplates an offering referring to the King's personal rather than to his regal qualities.

2. Grossly flattering the king, Bacon quotes from Plato that *all knowledge is but remembrance*—that the mind by nature knoweth all things, and only revives former impressions—obliterated through the dominion of our gross animal nature. He detects such a *light of nature* in His Majesty, ready to blaze upon occasion—extravagantly applies to him Solomon's comparison of the King's heart to the sands of the sea for comprehensiveness and minuteness of observation. Then he discourses of the King's Eloquence —*facile*, *felicitous*, and *orderly*.

3. Bacon then discovers that the King's virtue rivals his good fortune, and his virtuous disposition vies with happy self-control—a prosperous response of fact to his expectation, as connubial fidelity complemented with its prosperous fruit; a peaceful policy responded to by foreign powers; and in intellectual balance, the same happy proportion between the excellency of the King's endowments and wide range and soundness of his learning.[1]

[1] 'It was no light thing that, on the eve of a decisive struggle between our kings and their parliaments, royalty should be exhibited to the world *stammering*, slobbering, shedding unmanly tears, trembling at a drawn sword, and talking in the style alternately of a buffoon and of a pedagogue.'—*Macaulay*, Hist. of England, vol. i. 76.

4. BACON then affirms that without exaggeration King JAMES is the most *learned*, *erudite* monarch, that ever lived, and challenges the whole range of history from CÆSAR to MARK ANTONINE, and so downwards through all countries, in support of his assertion. It is much for a king to avail himself of the wit and labours of other men, and to patronise learning. But to be such a well of all knowledge, profane and sacred, as King JAMES was, is indeed a miracle! So that King JAMES like HERMES TRISMEGISTUS (the ancient Egyptian priest, philosopher, and king), stands invested with

the *power* and *fortune of a king*,
the *knowledge* and *illumination of a priest*,
the *learning* and *scope of a philosopher*.

This *inherent property* (in the logical sense of the word) deserves an adequate and lasting memorial.

5. Such a memorial BACON proposes to offer in a Treatise in two parts:—

1. Concerning the Excellence of Learning and Knowledge.
2. The Range and Branches of Knowledge embraced in the *Advancement of Learning*, with a Survey of Defects,

and he hopes to excite JAMES's princely cogitations in the same line.

BOOK I.

THE DIGNITY OF LEARNING.

(The Scheme is taken from the De Augmentis Scientiarum.)

- Regarding the
  - Dishonours and Derogation of Learning in the
    - Discredits from
      - Divines (Chap. 1.)
        - Desire of Knowledge the first Sin.
        - Knowledge endless—an anxious thing.
        - Learning the cause of Heresy and Atheism. Objected and Answered.
      - Politicians (Chap. 2.)
        - Learning makes men unapt for Arms.
        - Disables men from Civil Affairs.
        - Particular [illegible] imputed to Learning. Objected and Answered.
      - Learned Men. (Chap. 3.)
        - Fortunes
          - Scarcity of Means.
          - Privateness in Life.
          - Meanness of Employment.
        - Manners
          - Too incompatible with the Times.
          - Too sensible of the Common Good.
          - Not accommodating to Persons of Quality.
          - A failure in Behaviour.
          - Gross Flattery practised by some.
        - Studies in irrelevant matters.
    - Distempers in Studies. (Chap. 4.)
      - Fantastical Learning.
      - Contentious Learning.
      - Delicate Learning.
    - Peccant Humours. (Chap. 5.)
      1. Affection to two Extremes—Antiquity and Novelty.
      2. A distrust that anything new should be found out.
      3. A conceit that the best opinions still prevail.
      4. A too peremptory reduction of Sciences to Method.
      5. A neglect of Primitive Philosophy.
      6. A Divorce of the Intellect from the Object.
      7. A Contagion of Knowledge from Particular Inclination.
      8. Impatience of Suspense—haste to Positive Assertion.
      9. A Magistral (dogmatic) Manner of Tradition of Knowledge.
      10. Aim of Writers—Illustration not Propagation.
      11. End of Studies, Curiosity, Pleasure, Profit, &c.
  - Honours and Prerogatives of Learning.
    - Divine (Chap. 6.)
      - Wisdom of God—Angels of Illumination—First Light and Sabbath—Cain and Abel—Honour to Inventors before the Flood—Confusion of Babel, &c.
      - The Learning of Moses, Job, Solomon, Christ, Paul, Ancient Doctors.
    - Human. (Chap. 7, 8.)
      - Inventors of Arts consecrated as Gods.
      - Civil Estates advanced by Learning.
      - The Concurrence of Arms and Learning.
      - The Dominion and Gifts of Learning.
      - Immortality.

BOOK I.

CHAPTER I.

1. DISCREDITS OF LEARNING FROM THE OBJECTIONS OF DIVINES:

(*a*) That the aspiring unto Knowledge was the first Sin.
(*b*) That Learning is Infinite, and full of anxiety.
(*c*) That Learning inclines the Mind to Heresy and Atheism.

2. THE SOLUTION:

(*a*) Original Guilt was not in the *Quantity*, but *Quality* of Knowledge.
Corrective—Charity.

3. AGAINST INFINITY, ANXIETY, AND SEDUCEMENT OF KNOWLEDGE:

Three Preservatives:

(i) That it instructs us in our Mortality.
(ii) That it gives us Content.
(iii) That it soars not too high.

So Philosophy leads the Mind by the links of Second Causes to the *First Cause*.

Preliminary. Briefly removes the *prejudices* against learning, with *proofs divine* and *human* of its *dignity*.

BACON discusses the *Discredits* and *Disgraces* which *Ignorance* has cast upon *Learning*, discovering it sometimes in—

1. The Zeal of Divines;
2. The Arrogance of Politicians;
3. The Errors of Learned Men themselves.

With respect to the Zeal of Divines, he says: I hear the former sort say—

(i) That knowledge is of the nature and number of those things to be accepted with great *limitation* and *caution*.

(ii) That the aspiring to overmuch knowledge was the original temptation and sin, whence the fall of man—that knowledge 'puffeth up.'

(iii) That SOLOMON gives a censure—'*that there is no end of making books*,' '*and much reading is a weariness to the flesh*.'

That in extensive knowledge there is much *contristation* (trouble or distress), and he that increaseth knowledge increaseth anxiety.

(iv) That St. PAUL cautions us, that *we* '*be not spoiled through vain philosophy*.'

(v) That learning induces *Heresy* and *Atheism*, and the *contemplation of Second Causes derogates from the First*.

The objections of divines answered.

It was not the knowledge of nature, and universality, nor the *quantity* of knowledge, but the *quality* of it—the proud knowledge of good and evil to render himself independent of God's law—which was the form of the temptation to man.

Quantity of knowledge cannot fill the soul, but God and the contemplation of God can. SOLOMON says, the '*eye is never satisfied with seeing, nor the ear with hearing*.' If there be no fulness, the *containing* is greater than the *contained*.

After describing the times and seasons for all actions and purposes, he says, God 'hath also placed the world in man's heart, yet man cannot find out God's work from beginning to end.' He regards the mind not only as a mirror to behold the beauty and variety, but purposes to discover and discern His ordinances and decrees.

Though he insinuates the supreme law of nature is beyond our discovery, he refers the hindrance rather to impediments than to insufficiency of mental power—such as shortness of life, ill-assorted labour, fallible tradition, and ills to which nature is liable.

In fact, SOLOMON asserts that nothing in creation is denied to inquiry.

The capacity of mind shows that the danger lies in the *Quality*, not the *Quantity*, of knowledge; and the corrective is *Charity*. 'Knowledge puffeth up, but Charity edifieth.'

The censure of SOLOMON about writing books and weariness of study, and the admonition of PAUL, that we be not seduced by 'vain philosophy,' if rightly understood, set forth the true limitations of knowledge, which are three:

The three limitations of knowledge.

(i) That we do not place our felicity in knowledge so as to forget our mortality.

(ii) That we apply our knowledge to give contentment and not repining.

(iii) That we do not presume, by contemplating nature, to attain to the mysteries of God.

BACON touches upon these three limitations.

Comments on the three limitations of knowledge.

(a) In a well-known passage SOLOMON says: 'Knowledge recedes from ignorance as light from darkness; the wise man sees where the fool gropes, but mortality involves them both.'

(b) *Vexation* or anxiety arises from the misapplication of knowledge, and prostituting it to 'weak fears or vast desires.' BACON calls pure knowledge '*Lumen siccum*;' knowledge affected by caprice, '*Lumen madidum*.'

(c) With respect to *presumption*, he quotes PLATO, who compares the sense of man to the sun, which in revealing the earth obscures the stars; 'so doth the sense discover natural things, and shutteth up divine.'

(d) As for the charge that *too much knowledge leads to Atheism*, it is the reverse. It is the *superficial* knowledge which rests with second causes. A further advance leads to *Religion*.

Conclusion. Practical advice.

Conclusion.—Let men endeavour to progress in knowledge and aim at proficiency; apply both to *charity*, and not to *vanity*; to use, and not to ostentation; and not unwisely *confound Theology* with *Philosophy*.

CHAPTER II.

DISCREDITS OF LEARNING FROM THE OBJECTIONS OF POLITICIANS.

1. That Learning softens men's minds, and makes them unfit for Exercise of Arms.

2. That Learning perverts men's minds from matters of Government.

3. Other Indispositions of mind for Policy and Government pretended:—

(*a*) Curious Uncertainty.	The study of the Arts makes men curious by *Vanity of Reading*;
(*b*) Pertinacious Regularity	or, too overweening by greatness of Examples;
(*c*) Misleading Precedents	or, too incompatible with the times by the Dissimilarity of Examples;
(*d*) Retired Slothfulness	or, diverts men's minds from business and action, instilling a love of Leisure and Privacy;
(*e*) Relaxation of Discipline	or, it makes men more ready to argue than obey.

THE SOLUTION.

1. Learning makes men not unapt for Arms.

2. Learning fits men for Civil Affairs.

3. The Indispositions of mind above given are rather cured than caused by Learning.

Discredits cast upon *Learning* by the objections of *Politicians*.

1. BACON quotes in reply, ALEXANDER THE GREAT, JULIUS CÆSAR, EPAMINONDAS, and XENOPHON; and travelling through History shows that as in man vigour of body and mind coincide, so in states do Glory in Arms and Literature.

2. History shows that the charge made by politicians against Pedantry is untrue. The minorities of NERO and GORDIANUS when in the hands of Pedants are quoted in reply against the governments of mature age; and Popes springing from the cloister have excelled those ascending the Papacy from the Courts of Princes.

3. (a) *Curious Uncertainty*, i.e., *arising from anxious inquiry.*

If Learning does render the mind irresolute and perplexed, yet it also teaches how to arrange thought—how to deliberate and when to resolve.

(b) *Pertinacious Regularity.*

If this be granted. Learning shows what are matters of proof, and what of supposition—shows as well the use of exceptions as the stability of rules.

(c) *Misleading Precedents.*

Learning rather by unfolding examples rectifies men by cautions taught by examples of errors, and BACON quotes CICERO, PHOCION, the fable of IXION, and CATO THE SECOND as instances to wean men from irresolution.

(d) *Retired Slothfulness.*

That Learning agitates the mind, and disposes it to slothfulness is a contradiction of Terms. Learned men alone love business for its own sake, others do so for profit, power, vanity. *Fondness for study* when confined to idleness in business, is due to some weakness or effeminacy in body or mind.

The charge that Learning takes up too much valuable time is met by showing that it properly fills up times of leisure, and saves a man from idleness, pleasure, and sensuality.

(e) *Relaxation of Discipline.*

The charge is supported by three examples:—

1. CATO THE CENSOR, when CARNEADES the Ambassador came to Rome, cautioned the Senate against Eloquence, lest it might enchant the youth and introduce an alteration in the manners and customs of the State.

2. VIRGIL yields the Arts of Policy to the Romans, and the Arts of Literature to the Greeks.

3. ANYTUS, the accuser of SOCRATES, charged him with debasing authority and reverence of the laws by his discourses.

To these BACON answers:—

1. CATO was well punished for *blasphemy against learning* by 'going to school again and learning Greek when he was old.'

2. The Romans never ascended to the height of *Empire* till they had ascended to the height of the *Arts*. In the time of the first two Cæsars, persons most perfect in statecraft were contemporaries of the best Poet, VIRGIL; the best Historian, LIVY; the best Antiquarian, VARRO; the best Orator, CICERO.

3. SOCRATES lived during the tyranny of the thirty Tyrants, after which time those discourses for which he was accused were celebrated by all posterity as sovereign antidotes to the poison infecting mind and manners.

CHAPTER III.

DISCREDITS OF LEARNING DUE TO LEARNED MEN THEMSELVES.

1. FORTUNES:
   - (*a*) Scarcity of Means.
   - (*b*) Obscurity of Life.
   - (*c*) Meanness of Employment.
2. MANNERS:
   - (*a*) Too regular for the Times.
   - (*b*) Too sensible of other's good and negligent of their own.
   - (*c*) Failure in accommodating themselves to particular persons.
   - (*d*) Failure in some points of Behaviour.
3. FAULTS OF LEARNED MEN:
   - (*a*) Gross Flattery practised by some Learned Men.
   - (*b*) Instanced in the Modern Dedication of Books.
   - (*c*) Discreet Morigeration (Complaisance) allowed.

Discredits of Learning from learned men's fortunes, manners, and nature of studies. (For the last see Ch. IV.)

BACON says the 1st, *Fortune*, is not in the power of learned men; the 2nd, *Manners*, is not to the point; the 3rd, *Nature of Study*, falls only within the province of inquiry. But in deference to popular prejudice he discusses all three.

1. FORTUNE.

(a) *Scarcity of means.*

That the poverty of learned men is no discredit BACON shows by quoting MACHIAVELLI, to wit, 'that the kingdom of the clergy would soon have come to an end, if reverence for the poverty of the Friars had not been born out of the excesses of Bishops and Prelates;' so 'the magnificence of Princes would have long since turned to

barbarism and rudeness, if the poverty of learning had not kept up civility and honour of life.'

LIVY in his preface identifies the prosperity of Rome with respect to poverty and parsimony and its downfall with the inroad of luxury and avarice. CÆSAR the Dictator was counselled to take the first step in reviving the State by degrading the estimation of wealth; and BACON quotes the Proverb that 'whoso hasteth to get rich shall not be innocent,' and the old saying, 'Buy the truth and sell it not.'

(b) *Obscurity of Life.*

Upon the theme of leisure and retirement, when not combined with sensuality and sloth, with the advantages of liberty, sweetness, dignity, and freedom from indignity, men are universally agreed.

Learned men, forgotten in states, are like the images of BRUTUS and CASSIUS in the funeral of JUNIA, of which representation TACITUS says, 'They are more conspicuous by their absence.'

(c) *Meanness of Employment.*

This is evidenced from the fact that the contempt of youth entrusted to them for tuition is transferred unworthily to the tutors. Men are more careful about what is put into a new vessel than into a seasoned one, and bestow more care over a young plant than over one grown and strong. Scripture shows youth is more honoured than age, and though Theatres ridicule Pedants, it is an old complaint that States are too busy with laws to the neglect of education. The care for education by the Jesuits is commended by BACON as worthy of example.

2. MANNERS.

Though learned men, like all others, have different temperatures (temperaments), good and bad, yet upon the whole, the influence of learning and study upon men, unless very depraved, is to reform nature, and change it for the better.

(a) *They are too rigid for their times.*

Like DEMOSTHENES, CICERO, CATO THE SECOND, and SENECA, they are impressed by what they read of other days, and would measure their own dissolute time by ancient standards of virtue and discipline. Yet SOLON, PLATO, and CICERO warn them to a due consideration of present circumstances, and 'not to extend the line and limits of duty beyond natural bounds.'

(b) *Too sensible of the good of others, and too indifferent to their own.*

DEMOSTHENES is quoted, who gave good advice to the Athenians to his own loss; and SENECA who persevered in showing the path of good, though his pupil NERO went to the bad. Learning imbues the mind with a true sense of human frailty, the mutability of fortune, the dignity of the soul, and the claims of duty. Possessing which, learned men in view of the account they have to render to God, and those whom they serve, cannot stoop to their own advancement. Politicians on the other hand do not pursue good for its own sake, but cast their whole care on the worship of *self* which is preferred to the *welfare of the state.* If they are unmoved by political storms, it is owing to homage due to honesty, rather than to their fickle dispositions. This delicate sense and tie of duty learning implants in the soul, and though the victim of Fortune, and the contempt of Politicians, it compels general assent, and needs no further argument in its favour.

(c) *They do not easily accommodate themselves to persons with whom they live.*

This arises from two causes:—

First, the largeness of their minds, which cannot condescend to contracted understanding.

Secondly, the honesty and integrity of their nature.

The man who cannot adjust his mind to different spheres is deficient in a great faculty for an active course

of life; and the true limits of our deferential behaviour to people extend no further than polite conversation—to understand inclination and disposition only with a view to give good advice, and to be on our own guard. To fathom a man's mind with a view to twist him at pleasure is heinous.

(d) *Failure in Matters of Behaviour.*

It may be in countenance, gesture, gait, conversation, &c. Their deficiences in such respects lead men to a false judgment as to their capacities in greater matters. THEMISTOCLES when asked to play a lute, replied, 'He could not fiddle, but knew how to make a small town a great state.' And ALCIBIADES compared SOCRATES to the gallipots of the apothecaries, which on the outside were drawn with Apes, Owls, Antiques, &c., but contained within precious liquors and sovereign remedies.

3. BASE AND UNWORTHY CONDITIONS OF SOME LEARNED MEN.

(a) They have by their severity demeaned themselves and discredited Learning. Such were the 'Trencher Philosophers'—parasites, who in the later age of the Roman state clung to great men. LUCIAN ridicules a Philosopher, whom a great lady made ride in her coach, and gave him her dog to carry, whereupon her page observed '*the Stoic would turn Cynic.*'

(b) The modern dedication of Books to Patrons is not to be commended. The custom of the ancients to dedicate books to private friends was better, or if they dedicated books to kings or great persons, it was to such as the argument was fit for.

(c) Discreet complaisance and subservience towards great men is to be allowed (*i.e.*, in BACON'S estimation, for there was much in his life which required an apology for such an unworthy practice).

BACON does not condemn this complaisance. He quotes the reply of ARISTIPPUS, when asked 'How it came to pass

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that philosophers were followers of rich men, and not rich men of philosophers?'—it was answered 'because *Philosophers knew well what they wanted*, but *rich men did not*.' So a Philosopher excused himself for prostrating himself before DIONYSIUS, by saying 'It was the fault of Dionysius to have his ears in his feet.' So one who would not dispute with HADRIAN excused the fact by saying 'It was reason to yield to him that commanded thirty legions.' BACON says such instances appear servile, but are to be accounted submissions to the Occasion not to the Person.

CHAPTER IV

DISTEMPERS OF LEARNING.

1. DELICATE LEARNING, or Vain Affectations:
   - (*a*) Profuseness of Speech.
   - (*b*) Decent Expression commended.
   - (*c*) Affected Brevity censured.

2. CONTENTIOUS LEARNING, or Vain Altercations:
   - (*a*) Novelty of Terms, or
   - (*b*) *Strictness* of Positions.
   - (*c*) Vanity in *Subject-matter* (Fruitless Speculation),
   - (*d*) Or in (Scholastic) *Method.*

3. FANTASTICAL LEARNING, or Vain Imaginations:
   - (*a*) Credulity
     - Belief of History.
     - Matter of Fact.
     - Matter of Opinion.
       - Real.
       - Personal.
   - (*b*) Imposture.

Distempers of Learning from learned men's studies of three sorts.

1. Delicate Learning, or vain affectations.

2. Contentious Learning, or vain altercations.

3. Fantastical Learning, or vain imaginations.

BACON proceeds to discuss the commonly recognised errors and vanities which are blemishes or impediments in matters of Learning.

These vanities he finds chiefly to be three, which he calls *three Distempers of Learning*:—

1. Delicate Learning, or vain affectations.
2. Contentious Learning, or vain altercations.
3. Fantastical Learning, or vain imaginations.

1. DELICATE LEARNING, or VAIN AFFECTATIONS.

(a) *Superfluity and Profuseness of Speech.*

The first Distemper of Learning is *that men study words* not *matter*, and as words are images, it is like PYGMALION'S frenzy to fall in love with a picture.

Verbosity grew into estimation about LUTHER's time owing to the heat and efficacy of preaching in drawing people. Animosity to the Schoolmen found vent in reaction from their style. Rhetoric and oratory were cultivated rather than Logic and Precision. The learning o. the Schoolmen fell utterly into disrepute. In fine the whole bent of their time was imitation, not reality; language not thought.

(b) *Decent Expression commended.*

To illustrate the obscurity and roughness of philosophy by sensible elocution is not to be deprecated. We have great examples in XENOPHON, CICERO, SENECA, PLUTARCH, and PLATO. Though severe inquiry into truth may be somewhat hindered by ornate language, yet it is advantageous in many ordinary occasions of life. False Delicacy and Vain Imaginations are like the statue of ADONIS in the temple, of which HERCULES said '*Nil sacri es.*'

(c) *Affected Brevity censured.*

The opposite evil—sententious brevity—is used as an artifice to make a passage seem more witty and weighty than it is. Such a style we find most evident in SENECA, then TACITUS and the younger PLINY. Meaner capacities delight in it, as an ornament to learning. Graver judgments condemn it, as a distemper of learning, seeing it is hunting after words, and grouping them with effect.

2. CONTENTIOUS LEARNING, OR VAIN ALTERCATIONS.

(a) *Novelty of Terms.*
(b) *Strictness of Positions.*

The substance of matter is better than the beauty of words, so the vanity of matter is more odious than the vanity of words. ST. PAUL lays down two characteristics of false science, *novel strange terms* and *strictness of positions.* The latter induce opposition, and questions. As sound substances in nature corrupt at times into worms, so sound

knowledge is corrupted by idle and *vermiculate* (involved) expressions. The Schoolmen, whose wits were cramped by the paucity of reading, as their bodies were affected by confinement in monasteries, were victims of this degenerate learning, and out of no great quantity of matter, like spiders, they spun their 'cobwebs of learning,' admirable for fineness of thread and work, but of no substance or profit.

(c) *Fruitless Speculative Controversy.*

(d) *Scholastic Method.*

Scholastic Method.

The Method of the Schoolmen was this: upon every position or assertion they framed objections, then solutions of these objections, which for the most part were only distinctions. The combination and harmony of its parts and axioms is the strength of science like 'the bundle of sticks.' The Scholastic Method does not rest truth upon general arguments, authorities, similitudes and examples, but upon *particular* disproofs, and solutions of every scruple, cavil and objection, 'breeding question upon question.' Like the monstrous form in the fable of SCYLLA, some of their generalities are to good purpose, but when you descend to their trivial distinctions you meet with only purposeless untruth and aggravating quibbles.

Controversy.

It is no wonder that controversy disgusts people, and makes them think those who never agree to be all wrong together; and when they see the futile disputes (*digladiations*) of learned men upon trifles, they endorse the sentiment of DIONYSIUS of Syracuse, '*that such logomachy is the mark of idle old men.*' If the Schoolmen had applied their laborious ability to width of reading, they might have contributed to the advancement of Art and Science.

3. FANTASTICAL LEARNING—VAIN AFFECTATIONS.

The third Disease of Learning is *deceit.* The truth of being and the truth of knowing are all one, differing no more than direct and reflected light. The vice affecting them is twofold—imposture and credulity. The first springing out of

cunning, the last out of simplicity. Yet both go together. None are so apt to spread rumours as those who believe them, and there is a remarkable agreement between the propensity to deceive, and the readiness to believe.

(a) *Credulity—Belief of History and Reports:* chiefly to the discredit of Ecclesiastical History and Natural History.

The former contains reports of miracles wrought by Martyrs, Hermits, Monks, and legends of Relics, Sepulchres, Chapels, Images, and Shrines. Natural History too, at the hands of PLINY, CARDAN, ALBERT, and the Arabians is stuffed with fabulous stories, unworthy of credit, to the great disparagement of Natural Philosophy with sober men. ARISTOTLE by separating reports of prodigies from his Natural History showed great wisdom.

(b) *Credulity as to Opinion.*

(i) too much belief in the Arts themselves.
(ii) in the authors.

The three Sciences which hold more of fanciful belief than demonstration are:

(i) Astrology. (ii) Natural Magic. (iii) Alchemy.

The ends of these are noble:—

ASTROLOGY, to discover the law of the higher universe over this globe.

NATURAL MAGIC, to reduce Natural Philosophy from speculative theory to practical utility.

ALCHEMY, to resolve and analyse compounds into their simples, in fact to fulfil the functions of Modern Chemistry.

But the prosecution and practice of these is fraught with error and imposture.

Of Alchemy it must be said as illustrated by Æsop's fable of the Husbandman and his Sons—that the painful

search of the alchemists to make gold has discovered a great number of fruitful experiments useful to man.

The dictatorial power given to Authors has done infinite mischief, and kept Science at a low ebb.

In Mechanical Arts, the first Inventor comes short, time supplies the rest. In Sciences, the first Author goes farthest, time only corrupts. Thus, Artillery, Navigation, Printing, from crude beginnings have made ample progress; whereas, the Philosophies of ARISTOTLE, PLATO, EUCLID, ARCHIMEDES, HIPPOCRATES, have lost vigour since the time of their authors, so that in Mechanical Arts many wits have contributed by one. In the Liberal Sciences many wits have yielded to the art of some one. As water will not rise beyond its level, so philosophy derived from ARISTOTLE will not rise beyond ARISTOTLE. To conclude the point, BACON says—'*Let great authors have their due so that we do not derogate from Time the Author of Authors, and the Parent of Truth.*'

CHAPTER V.

PECCANT HUMOURS IN LEARNING, OR LESSER ERRORS OF LEARNED MEN.

(*a*) Extreme Affection to two Extremes, *Antiquity* and *Novelty*.

(*b*) A Distrust that anything New should now be found out.

(*c*) Belief in the Wisdom of the Past—that of all sects and opinions the best hath prevailed.

(*d*) Method—a too early reduction of Knowledge into Arts and Methods.

(*e*) Love of Particulars—a neglect of Primary Philosophy.

(*f*) Reverence—a divorce of the Intellect from the Object.

(*g*) An intermixture of Favourite Studies, or Infection of Knowledge in general from individual inclinations.

(*h*) Impatience of Doubt—Haste to Assertion.

(*i*) Peremptory (*magistral*) Manner of delivering Knowledge.

(*k*) Aim of Writers—*Illustration* (Self-Glorification), not Propagation of Knowledge. Low ends.

(*l*) Mistake in the furthest End of Knowledge. The End of Studies—*Curiosity, Pleasure, Profit, Preferment*, &c.

Besides the three main Diseases discussed there are *peccant Humours* of Learned Men which cannot be passed over.

Peccant humours, or lesser errors in Learning.

(☞ Notice the relation of 'Humours' to 'Diseases' with reference to an old medical theory. *Vide* Glossary in Text-book.)

(a) *The Extreme Affection to two Extremes—Antiquity and Novelty.*

Like Father Time, his children devour each other. Antiquity envies new additions; Novelty defaces what it receives. Both have their place. Antiquity discovers the best path; Novelty progresses in it. '*Antiquitas sæculi*

juventus mundi.' *Ancient times* mean an ancient world, not the few years we count backward.

(b) *Novelty—A distrust that anything new should now be found out.*

This is a reproach against Time, which, having discovered so much long ago, ceases to bring to light anything now. Nothing shows the levity and inconsistency of men's judgment so much as their wonder if a thing can be done, until it be done. ALEXANDER's expedition, deemed impossible, and COLUMBUS's discovery of America are to the point. So propositions in EUCLID seem strange before proof; afterwards the mind accepts them by a kind of recognition (or *retraction*, i.e. rehandling), as if they were axiomatic.

(c) *Belief in the Wisdom of the Past, that of all sects and opinions the best has prevailed.*

So that if a man labours at a new discovery, people think he is only likely to come across what has been formerly rejected, and so forgotten. The fact is, that the majority of mankind are only likely to carry on what is superficial and popular. *Time* is like a stream which carries on its surface things light and empty, submerging those solid and weighty.

(d) *Method—a too early reduction of Knowledge into Art and Systems.*

Sciences receive little or no advance therefrom. When the frame of youth is knit, and set, stature is arrested; so knowledge, by *aphorisms* and observations is in growth; comprehended in exact methods, it may be polished and applied in use, but is checked in growth.

(e) *A Love of Particulars—a Neglect of Primary Philosophy.*

After such a distribution men neglect the *prima philosophia*—universality. No discovery can be made on a

level. To discover the remoter parts of science, you must ascend to a higher science.

(f) *Reverence—a Divorce of the Intellect from the Object.*

Men withdraw themselves from the contemplation of nature, and worship their own conceits; as HERACLITUS says, '*They seek for truth in their own little worlds*, and *not in the great world.*' Instead of reading the works of God, they invoke their own spirits to give them oracles whereby they delude themselves.

(g) *Intermixture of Favourite Studies and Infection of Knowledge in General from Individual Inclinations.*

Men tinge their meditations, opinions, doctrines, with their favourite studies. So PLATO has toned his philosophy with theology; ARISTOTLE his with logic; the later Platonist school theirs with mathematics. Alchemists have created a philosophy out of the crucible; GILBERTUS out of the loadstone. CICERO quotes the opinion of a musician about the nature of the soul, '*that it was a harmony.*'

(h) *Impatience of Doubt—Hasty Assertion.*

The two ways of contemplation are two roads—the one smooth at the beginning, presently impassable; the other difficult at first, presently fair and even. If a man begins with certainty, he ends in doubt and *vice versâ.*

(i) *Peremptory Manner of Delivery of a Subject.*

Another error is a dictatorial delivery of knowledge, which is not ingenuous and faithful. In compendious treatises for practical use, it may be allowed; but in true handling of knowledge we should keep the mean between VELLEIUS the Epicurean, who would doubt nothing, and SOCRATES who ironically doubted all things; and let judgment keep pace with proof.

(k) *The Aim of Writers—Self-Glorification not Propagation of Knowledge.*

Other errors there are in the scope that men propound to themselves in their studies. Instead of aiming at the advancement of knowledge, they have low personal ends in view—to make themselves good interpreters, commentators, controversialists, &c.; so the tributes of sciences are improved, not the patrimony and inheritance of it.

(l) *Mistake in the furthest end of Knowledge—the End of Studies, Curiosity, Pleasures, Profit, Preferment, &c.*

The greatest error of all is, *that men have entered upon the pursuit of knowledge from every kind of motive, but the sincere one of giving a true account of the gift of reason, for the benefit of man.* They seek for knowledge, as a *couch* to rest an unquiet spirit—a *terrace* for a wandering mind—a *tower* for a proud intellect—a *fort* for strife—a *shop* for profit, not a *storehouse* for the glory of God and good of man. To DIGNIFY knowledge, contemplation must be united to action, like the conjunction of SATURN and JUPITER, which represent these. Use and action, however, not for lucre's sake; for they thus retard the advancement of knowledge, like the golden ball thrown before ATALANTA, who hindered the race while she was picking it up.

Conclusion.

BACON'S meaning is, not to call in heavenly philosophy to set aside natural philosophy, and to limit it to the sphere of manners and policy. The end ought to be to reject from both shallow speculations, and to increase what is solid and fruitful, that knowledge may be not like a courtesan for pleasure, or a bondwoman for profit, but a spouse for comfort.

Thus describing the errors incident to learning, after faithful censure, attention will be paid to commendation. The next part of the argument will not be a hymn of praise, but a just estimation of the DIGNITY of knowledge, and its true value ascertained by testimonies human and divine.

CHAPTER VI.

DIGNITY OF LEARNING. DIVINE TESTIMONY.

§ I.

1. From God's Wisdom.
2. Angels of Illumination.
3. The First Light and First Sabbath.
4. Man's Employment in the Garden.
5. ABEL's Contemplative Life.
6. The Invention of Music.
7. Confusion of Tongues.

§ II.

THE EXCELLENT LEARNING OF

(*a*) MOSES.
(*b*) JOB.
(*c*) SOLOMON.
(*d*) CHRIST.
(*e*) PAUL.
(*f*) The ancient Doctors of the Church.

§ III.

(*α*) Learning exalts the Mind to the Celebration of God's glory.
(*β*) Learning preserves it against Error and Unbelief.

§ 1.

1. *From God's Wisdom.*

The dignity of Learning from Divine arguments and testimonies.

We must seek for Learning in the archetype—the attributes and acts of God. Learning in man is knowledge acquired. Knowledge in God is original, and we must look for it under another name, *Wisdom.*

The work of creation was a work of *Power* in creating Matter, and a work of *Wisdom* in beautifying *Form.* The one was the work of a moment, the other of six days.

2. *The Work of Angels: Angels of Illumination.*

BACON follows the celestial Hierarchy of DIONYSIUS of Athens.

1. Seraphim—Angels of Love.
2. Cherubim—Angels of Light.
3. Thrones.
4. Principalities.
5. And the rest are all *Angels of Power and Ministry*, noting that the *Angels of Knowledge* and *Illumination* are placed before the *Angels of Office* and *Dominion*.

3. *The Creation of the First Light and First Sabbath.*

Light in nature corresponds to knowledge in Spirits, and the day of rest wherein God did contemplate his works was blessed above all the rest.

4. *Man's Employment in the Garden.*

Man's work in the garden not being laborious and compulsory, but a delight, was a work of contemplation; and his first acts were two summary parts of knowledge—viewing the creatures, and giving them names.

The knowledge which induced the fall was not *natural knowledge*, but the *moral knowledge* of good and evil, and BACON supposes was an inquiry into the origin of Good and Evil.

5. ABEL'S *Contemplative Life.*

CAIN and ABEL were images of the active and contemplative states of life in the two simplest callings—those of husbandman and shepherd. God favoured the latter, not the former.

6. *The Invention of Music: The Confusion of Tongues.*

God honoured inventors before the flood, and, after it, showed his great judgment upon the ambition of man by

confounding the tongues, and so debarring the open intercourse of learning and knowledge.

§ 2.

THE EXCELLENT LEARNING OF

(a) MOSES.

MOSES was eminent in all the learning of the Egyptians, the most learned nation of antiquity. Consider the depth of the Ceremonial Law, which, besides prefiguring Christ, illustrating the difference of the people of God, the exercise of obedience, and other divine uses, furnishes the Rabbis with many profound deductions, natural and moral. One writer, upon the law of leprosy, observes, that *putrefaction is more contagious before maturity than after.* Another, that men abandoned to vice do not so much harm as those who are only half good and half bad.

(b) JOB.

The excellent book of Job is pregnant with natural philosophy, cosmography, astronomy, physical facts, animal and mineral.

(c) SOLOMON.

Eminent for wisdom and learning, which, by his prayer and God's assent, he preferred to all earthly felicity. Besides his Aphorisms, or Proverbs, replete with divine and human philosophy, he compiled a Natural History, embracing all things from the cedar to the moss. Yet with all his glory he only aspires to the glory of inquiring after truth.

(d) CHRIST.

First showed his power to subdue ignorance by disputing with the Doctors of the Law before he showed his power to subdue Nature by miracles.

The Power of the Holy Ghost was expressed in the gift of Tongues.

(e) *The Apostles were not all Unlearned*: St. Paul.

Though at first the Apostles were unlearned, that by inspiration they might more evidently declare God's immediate working, and abase human learning, yet St. Paul, who was the only one learned among the Apostles, had his pen most exercised in the compilation of the New Testament.

(f) *The Ancient Doctors of the Church.*

The ancient Bishops and Fathers of the Church were excellently read in heathen literature, so that Julian the Apostate interdicted learning from the Christians, which was more pernicious than persecution; and Pope Gregory the First received the censure of all holy men for designing to obliterate the memory of heathen writers.

It was the Christian Church which preserved ancient literature during the barbaric invasions of Scythians and Saracens.

[The revival of Learning at the Reformation, and strenuous exertions of the Jesuits on behalf of Education, are also to the point.]

§ 3.

(α) *Learning exalts the mind to the celebration of God's glory, and*

(β) *Learning is a Preservative against Error and Unbelief.*

There are two principal services besides ornament and illustration which philosophy and human learning render to faith and religion.

α. They are an effectual inducement to the exaltation of the glory of God. The Scriptures exhort us to consider and magnify the wonderful works of God; not only the exterior of them, like the exterior of a jeweller's shop, but to explore them.

β. They preserve us against error and unbelief. Christ said, '*Ye do err, not knowing the Scriptures nor the power of God.*'

Here are two books—first, the Scriptures, revealing the will of God; then, the book of Nature, expressing His power—not only opening our understanding by cultivating our reason, but leading us to meditate on the omnipotence of God.

CHAPTER VII.

DIGNITY OF LEARNING: HUMAN TESTIMONY.

1. NATURAL:
   (*a*) Inventors of New Arts for the Commodities of Man's Life consecrated as Gods.
2. POLITICAL. Civil Estates and Affairs advanced by Learning:
   (*a*) The best and happiest times under Learned Princes and others.
   (*b*) Exemplified in the immediately succeeding Emperors from the death of DOMITIAN.
3. MILITARY. The concurrence of Arms and Learning
   (*a*) Exemplified in ALEXANDER the Great.
   (*b*) „ „ JULIUS CÆSAR, the Dictator.
   (*c*) „ „ XENOPHON, the Philosopher.

The dignity of Learning from human arguments and testimonies.

1. Natural.
2. Political.
3. Military.

1. NATURAL.—THE INVENTORS OF NEW ARTS CONSECRATED AS GODS,

Among the Heathen: 'apotheosis' among the Greeks, and 'relatio inter divos' among the Latins, was the supreme honour man could render to man, especially when given by common consent and not elicited by decree, as with the Roman Emperors.

Antiquity made a difference in these honours—*Heroical* and *Divine*. The former were given to Founders of States, Lawgivers, Extirpators of Tyrants; in fact, special or local Benefactors, such as HERCULES, THESEUS, MINOS, ROMULUS, &c. The latter to those whose discoveries for the benefit of mankind were universal, as CERES, BACCHUS, MERCURIUS, &c.

2. POLITICAL.—CIVIL ESTATES AND AFFAIRS ADVANCED BY LEARNING.

Not only was learning thus honoured as bearing much fruit, but as bringing peace and security; as is shown by

the fable of ORPHEUS's lyre soothing the savage nature of beasts by its music, and remitting them by its silence to their old habits—the moral of which, as applicable to man, is evident.

(a) *The best and happiest times under Learned Princes and others.*

Kings and Princes, though subject to infirmities and passions, are preserved from ruinous errors by the notions of Religion, Morality, and Policy which they imbibe through Learning. 'So likewise their Senators and Councillors, which be learned, do proceed upon more safe and substantial principles than Councillors who are only men of experience' (i.e. who have to learn by it).

(b) *Exemplified in the immediately succeeding Emperors after* DOMITIAN.

This felicity of an epoch best appears in the age which intervened between DOMITIAN and COMMODUS, 'comprehending a succession of princes all learned, or singular favourers and patrons of Learning, and of all ages (if we regard temporal happiness) the most flourishing ever seen by Rome, which was then the Model and Epitome of the World'—NERVA, TRAJAN, HADRIAN, ANTONINUS, LUCIUS COMMODUS, and MARCUS COMMODUS. So in this continued sequence of six princes a man may see the happy fruits of Learning in Sovereignty pourtrayed in the greatest Table of the World.

3. MILITARY.—THE CONCURRENCE OF ARMS AND LEARNING EXEMPLIFIED IN ALEXANDER THE GREAT, JULIUS CÆSAR, AND XENOPHON.

(a) *Alexander the Great.*

Taught by ARISTOTLE. The value he put on Learning is shown by his reverence for HOMER, which he deemed the most worthy thing to be put into the precious cabinet of DARIUS, and his blaming ARISTOTLE for publishing his

Book of Nature, because he esteemed it better to excel others in Learning than in Power.

How excellently his mind was imbued with Learning is shown by his speeches and answers, which contain the footsteps of all sciences in moral knowledge, as evidenced by his answer to DIOGENES.

These answers and speeches prove his acquaintance with Natural Knowledge, Logic, Rhetoric, Policy, and show his acute intellect.

(b) *Julius Cæsar.*

His excellency in Learning is shown in his Commentaries, and the works De Analogia, Anti-Cato, Book of Apophthegms.

He showed himself a master of words

by subduing a mutiny with one word;
by his jest upon the word Rex when some one saluted him King;
by his reply to METELLUS the Tribune;
by his jest upon SYLLA.

(c) *Xenophon,*

The philosopher, a pupil of SOCRATES, conducted the retreat of the 10,000 from Babylon to Greece, and so paved the way for the subversion of the Persian monarchy achieved by ALEXANDER.

CHAPTER VIII.

ADVANTAGES OF LEARNING.

1. Learning is the sovereign Remedy for all Diseases of the Mind.
2. The Dominion thereof greater than any Temporal Power, being a Power over Reason and Belief.
3. Learning gives Fortunes, Honours, Delights excelling all others as the Soul does the Sense.
4. Durable Monuments of Fame.
5. A Prospect of the Immortality of a Future World.

The Merit of Learning from the influence it hath upon *Moral* virtues.

PROCEEDING from the discussion of imperial and military virtue to moral and private virtue. Learning reclaims men from wildness and barbarism, extinguishes vain and excessive wonderment (admiration). We admire things because of novelty or size; as for the former, we are taught '*there is nothing new under the sun;*' as for the latter, we are reminded of ALEXANDER in the midst of his gigantic affairs in Asia, who compared the little matters of Greece to HOMER'S Battle of the Mice and Frogs. If we elevate our thoughts, the globe and men upon it will appear to us like a hillock covered with ants.

1. *Learning is a sovereign Remedy for all Diseases of the Mind.*

It takes away or mitigates the fear of death and adverse fortune. It purges ill humour, clears obstructions, helps digestion, excites appetite, heals wounds and sores, and the like. It so disposes and inclines the *mind*, that it is never wholly settled with its defects, but ever longs after

growth and perfection. The unlearned man cannot turn his mind inward, or enjoy the sweets of daily improvement; whereas, a learned man not only employs his mind, and exercises his faculties, but continually reforms himself and progresses in virtue. Goodness is the impression of Truth, but the tempests of vice and passion break from the clouds of Error and Falsehood.

2. *The Dominion of Learning is greater than any Temporal Power, being a Power over Reason and Belief.*

Passing from morality to power, there is no sovereignty comparable to that with which Learning invests its possessor. Dignity of command is measured by the dignity of the commanded. The command of a shepherd over his flock is contemptible—of the schoolmaster over children, a small honour—of masters over slaves, a disparagement—so is that of tyrants over a servile people. The honours of a free monarchy or commonwealth are more sweet than those of a tyranny, because a willing service is more honourable than one enforced. But the sway of knowledge is higher than command over the will though free. For it is a dominion over reason, belief, and the understanding, which is the highest part of man, and gives law to the will itself. The empire of Knowledge and Learning is over the souls and thoughts of men.

Hence the tenacity and pleasure with which arch-heretics, false prophets, and impostors hold their dominion over the consciences of men in spite of punishment. This is the depth of Satan, but the commendation of truth approaches nearest to the similitude of Divine rule.

3. *Learning gives Fortunes, Honours, Delights excelling all others, as the soul does the sense.*

It is an ancient observation that HOMER has given more men their living than either SYLLA, CÆSAR, or AUGUSTUS ever did. It is hard to say whether Arms or Learning have

advanced greater numbers. But if Arms have carried away the kingdom, yet Learning hath borne away the priesthood, which has ever competed for empire.

4. *Durable Monuments of Fame.*

If you contemplate the pleasure and delight of Knowledge, assuredly they far surpass all other pleasure. The pleasures of the affections transcend those of the senses, and the pleasures of the intellect transcend those of the affections. In other pleasures there is satiety, none in Knowledge, which is ever fresh, as LUCRETIUS says: '*It is a prospect of delight to stand or walk on the sea-shore and see a ship tossed by a tempest. It is a pleasure to stand at the window of a castle and watch a battle. But it is a pleasure incomparable for the mind settled by learning and fortified in the tower of truth to behold the errors and wanderings of other men below.*'

5. *A Prospect of the Immortality of the Future World.*

All earthly monuments pass away, but the monuments of knowledge and learning are more durable than those which are material. The verses of HOMER, without the loss of a line, have for twenty-five centuries survived the perishable wrecks of cities, temples, and palaces. The pictures of CYRUS, ALEXANDER, CÆSAR, are lost, but the images of men's wits remain unmaimed in books for ever, exempt from the injuries of time, because capable of perpetual renovation. 'If the inventor of ships was deemed noble, which transport merchandise from place to place, and connect distant parts of the earth, how much more are letters to be magnified, which as ships passing through the vast sea of time, unite the remotest ages of wits and inventors in mutual traffic and correspondence?'

Some philosophers who denied the immortality of the soul, yet convinced by truth, came to this: 'that whatsoever motions and acts the spirit of man could perform without the organs of the body, it was probable that those

survived after death.' Such were the motions of the understanding, not of the affections—so immortal and incorruptible a thing did Knowledge appear to them to be. Revelation teaches us how both mind and affections will be purified, and body and soul advance to immortality.

But at the beginning, the divine and human proofs of the Dignity of Learning were kept separate, and we cannot hope to reverse the ways of man's judgment. ÆSOP's cock preferred the barleycorn to the gem; MIDAS judged for plenty between APOLLO and PAN; PARIS judged for pleasure and love against wisdom and power; and AGRIPPINA preferred empire with any detestable condition. So men prefer custom to excellency. Learning has ever relied on a firm foundation that cannot be shaken 'Wisdom is justified of all her children.'

THE EMANATION OF THE SCIENCES

From the Intellectual Faculties,

MEMORY, IMAGINATION, REASON.

(*This Scheme is taken from the De Augmentis Scientiarum.*)

For the particular Analytic Scheme of Book II. the Student must consult his Text Book.

From these

- 1. HISTORY . . .
  - Natural, the Subject; the Use
  - Civil
    - Civil, properly so called
    - Ecclesiastical
    - Literary
  - } Book II.
- 2. POESY . . . .
  - Narrative, or Historical
  - Dramatical, or Representative
  - Parabolical, or Allusive
  - } Book II.
- 3. PHILOSOPHY . .
  - Primitive Sapience (*wisdom*) the Receptacle of General Axioms.
  - Derivative
    - Divine or Natural Theology
    - Natural
      - Speculative
        - Physics
        - Metaphysics
      - Operative
        - Mechanic
        - Magic
    - Humane
      - General—the Nature of Man
      - Special—Philosophy
  - } Book III.
- HUMANE so called of
  - BODY into Arts
    - Medicinal—*corrective*
    - Cosmetic—*decorative*
    - Athletic—*vigorous*
    - Voluptuary—*sensual*
  - } Book IV.
  - SOUL, the . .
    - Substance
      - Spiritual—Native or Adventitious, &c.
      - Sensual—Fiery or Aerial, &c.
    - Faculties
      - Rational—Intellect, Reason, Imagination, &c.
      - Sensual—Voluntary Motion, Sense, &c.
    - } Book IV.
    - USE OF FACULTIES
      - Logic
        - Invention or Exquisition
        - Judgment or Examination
        - Memory or Custody
        - } Book V.
        - Elocution or Tradition
          - Grammar
          - Method
          - Rhetoric
        - } Book VI.
      - Ethics
        - Platform of *Good*
          - Kinds of Good
          - Degrees of Good
        - Culture of the Mind
          - Tempers
          - Distempers and Cures
        - } Book VII.
  - CIVIL of . .
    - Conversation
    - Negotiation
    - Government of States
      - Art of Enlarging a State
      - Fountain of Law
    - } Book VIII.

NOTE.—Inspired Divinity is here separate from Philosophy, yet Reason receives the Signs of Truth.

- DEFICIENTS
  - Use of Reason in Theology
  - Degrees of Unity in Religion
  - Deductions from Scriptures.
  - } Book IX.

Introduction—The Prerogatives and Disparagements of Learning—Book I.

BOOK II.

To the King.

Though often otherwise, it would seem most fitting that kings who cherish the immortality of their descendants should be solicitous about the welfare of future times, to which they must entrust them. Though Queen Elizabeth was unmarried, yet her happy memory and the impression of her good government survive her; but your Majesty, already blessed with worthy and illustrious issue, must not only regard what is transitory in good government, but what is permanent. Among such acts nothing is more worthy than the endowment of the world with sound and fruitful knowledge. Why should received authors be like the pillars of Hercules—the limits of the world, when we have the bright star of your Majesty to guide us beyond in the path of discovery? Bk. II. Proem.

It remains to consider the nature of those acts which have been performed by kings and others for the Advancement of Learning. Weighing well what has been accomplished and what neglected by Princes and others for the Propagation of Learning, let us lay down what will be allowed, that the greatest and most difficult works are overcome:—

(i) by amplitude of Reward, which encourages our labours.

(ii) by wisdom of Direction, which takes away error and confusion.

(iii) by conjunction of Labours, which supplements the frailty of man.

The principal of these three is the *wisdom of Direction*,

for a wise selection of the means does more effectually conduce to the perfection of any enterprise than any enforcement, or accumulation of endeavours. But it must be said that many of the works and acts of Princes are rather for the splendour and memory of their renown than for the Advancement of Learning, and have increased the number of learned men rather than increased learning.

- Acts for the Propagation of Learning.
  - Personal
    - General by the
      - (i) Amplitude of Reward.
      - (ii) Wisdom of Direction.
      - (iii) Combination of Labours.
    - Special . . .
      - Promoted by
        - Places, as
          - (i) Buildings.
          - (ii) Privileges.
          - (iii) Revenues,
          - (iv) Discipline.
        - Books, as
          - (i) Libraries.
          - (ii) Good Editions.
        - Persons, as
          - Lectures for Arts extant.
          - Inquirers into Arts non-extant.
      - Prejudiced for
        - Want of Foundations for Arts at large.
        - Want of sufficient Salary to Lecturers.
        - Want of Allowance for Experiments.
        - Want of a right course for proceeding in Studies.
        - Want of Intelligence between Universities.
        - Want of Inquiries into Arts deficient.

The Works or Acts pertaining to the Propagation of Learning are conversant about three objects: *The Places of Learning—the Books—the Persons of Learned Men.* For as water is lost except it be collected in some receptacle, so this most excellent liquor of knowledge would soon perish and vanish, if it were not conserved in Books, Traditions, Conferences and specially appointed places, as

Universities, Colleges, Schools, where it may have fixed stations, and opportunity of uniting and improving itself.

First. The works which concern the *Seats of the Muses* are four:

(i) *Foundations of Houses*:
(ii) *Endowments with Revenues*;
(iii) *Grants of Privileges*;
(iv) *Institutions and Statutes for Government*

All of which conduce to privacy and freedom from care, like the *stations* which Virgil describes for hiving of bees.

The works touching Books are two:

(i) Libraries.
(ii) New and correct Editions of Authors, more faithful Translations, more profitable Glosses, and more diligent Annotations.

The works pertaining to the Persons of Learned Men are also two;

(i) The remuneration and designation of Readers in Arts and Sciences already studied.
(ii) The remuneration and encouragement of writers in the field of learning already explored.

These briefly are the works which testify to the zeal of Princes and others towards the *State of Learning*.

The special promotion of Learning is prejudiced by six defects:

(i) Want of Foundations for Arts at large.
(ii) Want of sufficient Salary to Lecturers.
(iii) Want of Allowance for Experiments.

(iv) Want of Intelligence (or communication) between Universities.

(v) Want of Inquiries into Arts deficient.

(i) *Want of Foundations for Arts at large.*

The Colleges of Europe are all devoted to certain Professions, none are devoted to the free and universal pursuit of Art and Science.

It is all very well to judge Learning by its *use*, but it should not stop here.

The study of Philosophy is not an idle one. Like the stomach, against which the members rebelled in the fable, from it all the Arts and Sciences derive their strength. The happy progress of Learning hitherto has been retarded, because these fundamentals (Philosophy and free and universal study of the Arts and Sciences) have been superficially dealt with, and too much neglected.

This contraction of study to professional purposes has stunted the growth of Science, and prejudiced the welfare of states. For Princes experience a dearth of able men fit for administration, which would not be the case if History, Modern Languages, and Politics, were embraced in the curriculum of study.

(ii) *Want of sufficient Salary to Lecturers.*

The inadequacy of stipends to public lecturers seriously affects the progress of science. To promote the advance of scientific knowledge, the most able men should be selected, which will not be the case without sufficient inducement and reward. DAVID'S military law should be observed 'that those who stayed by the carriage should share equally with those who went into action.' So the salaries of speculative men should be equal to the gains of active men.

(iii) *Want of Allowance for Experiments.*

The case of the alchemist who sells his books to procure

furnaces expresses the state of things. Though it must be confessed that the sciences of observation have met with some regard in the provision of subsidiary instruments besides books, which are not the only things wanted. The supply of Astronomical Instruments, Maps, Botanical Gardens, and subjects for Anatomy are helps in a few things. Generally it may be laid down '*that there can be no advance made in exploring the secrets of Nature without liberal allowance for Experiments*,' whether of VULCAN or DÆDALUS, *i.e.* of furnace or engine. And as Ministers are allowed funds for investigation into the secrets of foreign diplomacy, so you must allow experimental philosophers means to investigate the secrets of nature, and imitate the liberal allowance of ALEXANDER to ARISTOTLE to obtain specimens for the compilation of his Natural History.

(iv) *Want of a right Course of Proceeding in Studies.*

Logic and Rhetoric.

There is a neglect of consultation on the part of the governing authorities of the Universities, and of visitation on the part of visitors, for the purpose of considering whether it is advisable to pursue an antiquated course of study, and what room there is for improvement. There is a maxim, that 'in all usages and precedents, the time of their origin must be considered, for if weak or ignorant the system is disparaged and open to suspicion.' This applies to much in vogue at the Universities, for instance, 'it is an usual practice (but in my opinion somewhat preposterous) that scholars in the Universities are too early entered in Logic and Rhetoric—arts better fitted for graduates than for novices and boys.' These are Arts of Arts, the one for judgment, the other for ornament. Both presuppose a well-stored mind, and the contrary being the case, they have degenerated into *childish sophistry* or *ridiculous affectation*, and have induced a habit of superficiality.

Scholastic exercises.

Another error arising from the mode of their pursuit is rife at the Universities. In scholastic exercises, there is a

divorce between *Inventive Faculty* and *Memory*, for most of the speeches are either premeditated and set, so nothing is left to original thought; or extempore, so very little is left to memory. Whereas in active life it is the combination of these faculties that is wanted. By the course pursued, the exercises are unpractical, and the motions and faculties of the mind are perverted, so that when the student emerges into practical life, he suffers from the defect, which he experiences and others notice. But this amendment of the institutions of the Universities is thrown out by way of suggestion.

(v) *Want of intelligent Communication between Universities.*

As the progress of Learning consists much in the wise government of the Universities in particular, so it would be more advanced if the Universities of Europe were brought more into communion and interchange of thought. As there are combinations or brotherhoods, social, political, ecclesiastical, and commercial, so there ought to be a generous fraternity between men of learning.

(vi) *Want of Inquiries into Arts deficient.*

There has very rarely been any public appointment of able men to ascertain the departments of learning hitherto neglected or uninvestigated. To this end it would be well if an estimate were taken from time to time of the state of learning, its progress and stagnation, where and why. The opinion of plenty is among the causes of want, and the superfluity of books covers a penury of thought. It is not by suppressing what has been published, but by issuing new and suitable publications, that the 'serpent of MOSES may be made to devour the serpents of the enchanters.'

The remedies of the defects above enumerated are *opera basilica*, and not within the province of a private man. The speculative part, however, which pertains to an

examination of knowledge with reference to the deficiencies of its various branches, is open to his industry.

Bacon's design in this work.

BACON'S design therefore 'is to attempt a general and faithful perambulation, and visitation of learning; specially with a diligent and exact inquiry, what parts thereof lie fresh and waste, and are not yet improved and converted to use by the industry of men,' so as to contribute help to public efforts, and to the voluntary labours of individuals. The purpose is at this time to note only omissions and deficiencies, and not to investigate errors and oversights.

The author is not unaware of the difficulties in his way, nor of the disproportion between his abilities and his will; his love to learning he pleads as an apology; he allows the same liberty of judgment to others which he pleads for himself, and anticipates his records of omissions and deficiencies will subject him to divers criticisms, such as: some part of his undertaking was executed long ago—that it is a matter of curiosity, and probably fruitless—that the scope is beyond the bounds of human industry. The first two strictures will be answered by the performance itself, the last touching *impossibility* meets with its response in the fact that that is to be accounted possible which may be done by some one, though not by everybody—which may be effected in successive periods, though not in the same period—which may be accomplished by united labour, though not by the exertions of one individual—and by the public expense, though beyond the ability and means of a private person.

It is enough if these labours be regarded as aspirations; and as it implies some knowledge to propose a question which is pertinent, so it requires some sense to conceive a wish which is not absurd.

CHAPTER I.

CLASSIFICATION OF LEARNING.

1. Universal Partition of Human (Secular) Learning into

(i) History.
(ii) Poetry.
(iii) Philosophy.

2. This Partition is taken from the triplicity of Intellectual Faculties:

(i) Memory.
(ii) Imagination.
(iii) Reason.

3. The same Division is appropriate to Divine (Sacred) Learning.

1. THE truest division of secular learning has reference to the three faculties of man's soul. History is referred to *Memory*. Poetry (not verse, which is but the expression of it, and belongs to the Art of Elocution) is *feigned history* and belongs to the *Imagination*. Philosophy to *Reason*.

2. History is particular or *proper* of Individuals circumscribed by time and place, and universal or natural. The latter deals with Nature regulated, as the heavenly bodies; or abnormal, as Monsters, &c. Both Natural and Civil History, which is concerned with particular men, belong to Memory.

3. Poetry is likewise of Individuals 'fancied to the similitude of those things which in true History are recorded.' It obeys Fancy not Fact: creates and exaggerates like the art of Painting, and is the work of the Imagination.

4. Philosophy deals with the *abstract*, and with general laws, and is wholly the office and operation of Reason.

5. The truth of this partition is evident from a consideration of the fundamental Intellectual operations.

6. The *senses* first take cognisance of outward things, the Images or *impressions* of which are fixed in the *Memory*. The understanding analyses these simple conceptions, concocts resemblances, or renders them complex. So from the three fountains of Memory, of Imagination, and of Reason, proceed History, Poetry, and Philosophy. By *History* and *Experience* we mean the same thing, so we use *Philosophy* and *Science* as synonymous.

7. The same division will serve for Divine (Sacred) learning. Theology consists of Sacred History; Parables, a kind of Divine Poetry; Precepts and Doctrines, an eternal Philosophy. Prophecy is a branch of History.

Divine History has this advantage over Human, that the narrative may be before the fact as well as after.

CHAPTER II.

HISTORY.

- HISTORY
  - NATURAL
    - *Subject of*
      - *Generations*
        - *Heaven* (Meteors).
        - *Earth* (Sea).
        - *Elements* (Specifics).
      - Præter *Generations*
        - *Monsters* (Marvels).
        - *Magic*, &c.
      - *Arts Mechanical*
        - *Agriculture.*
        - *Alchymy*, &c.
    - *Use and End of*
      - *Narrative.*
      - *Inductive.*
  - CIVIL
    - Properly so-called (*Secular*)
      - (1)
        - *Memorials.*
        - *Antiquities.*
        - *Perfect History*
          - *Chronicles.*
          - *Lives.*
          - *Relations.*
      - (2)
        - *Pure.*
        - *Mixed.*
    - *Ecclesiastical*
      - *General*, of the Church.
      - *Special*
        - *Prophecy.*
        - *Providence.*
    - *Literary*
      - *Ages.*
      - *Climates.*
      - *Declensions.*
      - *Revivals*, &c., of *Learning.*

Appendices to History, Orations, Epistles, Apophthegms.

HISTORY is either *Natural* or *Civil*, and Civil is divided again into *Secular*, *Ecclesiastical*, and *Literary*. Briefly we have to consider these four, *Natural*, *Civil*, *Ecclesiastical*, *Literary*.

The last is defective, for no one has recorded the state and progress of learning as he has political and ecclesiasti-

cal affairs. This is like the statue of POLYPHEMUS with his eye left out. Some scraps pertaining to divers particular sciences, and barren relations touching inventions and usages survive, but a just and comprehensive story of learning is wanting.

The use and end of such a work is to make learned men wise in the use and administration of learning, for the works of St. AUGUSTINE and St. AMBROSE will not make a divine so wise as the study of ecclesiastical history.

§ 1.

NATURAL HISTORY.

The History of Nature is of three kinds: Bk. II. 2.

(i) of Nature in course, *i.e.* in the history of creatures.

(ii) of Nature erring or varying, *i.e.* history of marvels.

(iii) of Nature altered or wrought, *i.e.* history of arts.

The first of these is in good perfection, the last defective.

(i) *History of Creatures.*

There is no general collection of deviations from nature, irregularities, freaks of nature, singularities of place, strange events, exceptions to general rule. Books of fabulous experiments and fabulous imposture do exist, but a substantial and severe collection of the heteroclites or irregulars of nature does not exist, especially with popular errors weeded out, which if once set on foot maintain their ground, through neglect of inquiry, countenance of antiquity, and lavish use of ornaments of speech.

(ii) *Of Marvels.*

The use of this work, following the example of ARISTOTLE, is to satisfy the craving of curiosity for two weighty reasons:

(*a*) To correct the partiality for axioms and maxims founded upon common examples. (*b*) Because the wonders of nature are the next step to the wonders of art. For when once nature is tracked to her hiding-place, the pursuit is easier. Nor should narratives of superstitions, sorceries, witchcrafts, dreams and the like be altogether excluded, for it is not known how much is due to superstition, and how much to natural causes, and inquiry is needed for both. As your Majesty has peered into such shadows with the two clear eyes of religion and natural philosophy, and, like the sunbeams, emerged uncontaminated with the pollutions. Narratives of miracles and prodigies of religion are either not true or unnatural, and therefore irrelevant.

(iii) *Of Arts.*

For *history of Nature wrought or mechanical* there are some collections made of Agriculture and of Manual Arts, but devoid of familiar experiments. These things are regarded as beneath the dignity of learning—an arrogancy derided by PLATO in the dispute between SOCRATES and HIPPIAS, a vaunting sophist. If the philosopher had looked into the water he would have seen the stars, but gazing at the stars he could not see the water and fell into it. So it happens that small things discover great, better than the great can discover the small. As ARISTOTLE says '*that the nature of everything is best seen in its smallest portions*,' so he rises to the conception of a commonwealth upwards from the cottage. The principle of the magnet was discovered first in needles, not in bars of iron.

The use of *history mechanical* is most pertinent to the study of practical Natural Philosophy, suggesting ingenious devices, stimulating inquiry and invention by comparative observation, and discovering principles and rules hitherto unknown. For as PROTEUS never changed shapes till he was held, so the Variations of Nature are never tracked till grasped by experiment and applications of Art.

§ 2.

Civil History.

Civil History is of three kinds, compared to three kinds of pictures—those which are unfinished; those which are perfect; those which are defaced. So we have Bk. II. 6.

(i) *Memorials*, or history unfinished.
(ii) *Antiquities*, or history defaced.
(iii) *Perfect History*.

(i) Memorials.

Memorials or *preparatory History* are of two kinds, Commentaries and Registers. Commentaries are a collection of naked events, with continuation but without design. Registers are collections of public acts without continuation or design. Cæsar calls his history a Commentary from modesty mixed with greatness.

(ii) Antiquities,

or *remnants of History* are like materials saved from shipwreck, which industrious people by laborious research and diligent comparison put together, and out of names, monuments, traditions, records, and fragments, save much from the deluge of time.

In such imperfect histories, defect is inherent and to be expected. Men of judgment discard Epitomes, which are the moths of History, and reduce them into base and unprofitable dregs.

(iii) Perfect History,

is of three kinds according to its subject—a *time*—a *person* —or an action. The first we call (α) *chronicles*; the second (β) *lives* (Biographies); the third (γ) *narrations* or *relations*. The excellence of the first is its *perfection*; of the Bk. II. 7.

second, its *utility*; of the third, its *veracity*. The History of Times is occupied with grand events to the neglect of minor details. But God 'hangs the greatest weight upon the smallest wires.' Well written biographies pourtray the intermixture of what is public and private, and are therefore more real.

Narratives which are specific, such as those of the Peloponnesian war, the Expedition of CYRUS, the Conspiracy of CATILINE. must from the nature of the thing be more exact than those which are general, because their scope falls within the knowledge and instruction of the writer, and there is less play for conjecture than in works of more comprehensive design.

(*a*) The History of Times is divided by the Providence of God, who has provided as examples to the world, in arms, arts, learning, policy, morals and laws, the states of Greece and Rome. They occupy the *middle place*, being preceded by *antiquities* (ancient history) and succeeded by *modern history*.

(a) *Ancient History*,

as might be expected, is defective, fragmentary, and fabulous. But the histories of Greece and Rome are in good preservation. Only not in perfect course from THESEUS to PHILOPŒMEN and from ROMULUS to JUSTINIAN. It would be well if the surviving texts, Greek and Latin, could be embodied in consecutive story, and the intervals supplied. But this is a work beyond present requirement, and we are dealing with what is supplemental, not expletive.

(b) *Modern Histories*

are in few cases worthy, and generally below mediocrity.

Omitting reference to modern histories, and confining attention to our own, we are struck by the unworthy condition of the history of England in its consecutive treatment, and especially of that of Scotland in its latest

delivery. What is wanted is a work *in extenso*, treating of Great Britain from the remotest times, and blending the annals of England and Scotland, yet preserving distinctness, like the interwoven stories of Judah and Israel. If the work is too vast in design, it might be limited to the period from the union of the Roses to the union of the kingdoms, pourtraying as it does the rarest varieties that ever happened in a like number of hereditary successions—the mixed claim to the throne, by arms and title—its acquisition by battle, its establishment by marriage, and the skilful pilotage of the vessel of state by a most able king through the swelling tide of political commotion left by the tempest of civil war—the reign of a king remarkable for its influence on European policy and the Reformation—the reign of a minor—then an ephemeral usurpation, followed by the reign of a queen ill-consorted with a foreigner—then the masculine government of a virgin queen potent in influence abroad—and, finally, our own time, when Britain 'divided from the rest of the world,' has been united in itself. As massive bodies before they are fixed undergo trepidation, so by the Providence of God those changes were a prelude to our present settlement under your Majesty, to continue it is to be hoped, throughout all generations.

(β) *Lives* (Biographies).

The age is singularly deficient in good biographies, for many worthy persons exist who deserve better remembrance than passing rumour or barren eulogy. The conceit of the poet has much truth in it that the thread of life has a medal attached with the person's name engraved upon it. Time cuts the thread with his shears, and carries off the medals to the banks of Lethe. There, birds hovering about pick them up, and drop them into the stream. Some however are caught by swans, which carry them to a temple where they are consecrated. Though some men desire their memory to survive them through motives of vanity, it does not alter SOLOMON'S dictum '*that the memory of the*

just is blessed, but the name of the wicked shall rot' (Prov. x. 7), and if CICERO says '*bona fama propria possessio defunctorum*,' it is a possession which in our time lies widely waste.

(γ) *Narrations.*

If particular narratives were more diligently undertaken, the compilation of a complete history would be an easier task. A collection of narratives would serve as a nursery 'whereby to plant a stately garden, when time should serve.'

Annals.

Annals relate affairs of state, and Journals chronicle minor matters and accidents. They hold to History the analogous position which Heraldry does to civil life. For as confusion in ceremonials derogates from a state, so history is debased, if matters of triumph, ceremony, or novelty, are intermingled with matters of state. Journals are useful, not only to general history, but to the particular history of persons and actions. Minute daily records were kept of passing events by ancient princes like AHASUERUS and ALEXANDER.

Bk. II. 10. Essays on History come under Policy.

The history of separate events to illustrate political observation—*ruminated* (digested) *history*—come more properly under *Policy*, as it is the province of history to solely delineate the events themselves, without the observations and conclusions which are suggested by individual judgment.

History of Cosmography, or History of Travels and Mathematics on their physical side.

This kind of history is a compound of Natural and Civil, with respect to localities and peoples, and of mathematics in respect to climate and astronomy. A subject in which creditable proficiency has been made in our days, which vie with those of antiquity on this score. Never

has the globe been completely surveyed before by circumnavigation. From this we may augur still further discoveries. For referring to the prophecy of DANIEL, it seems as if access to all parts of the earth and increase of knowledge were to receive their fulfilment simultaneously in these later days, and herein the learning of our time will not yield to that of the Greeks and Romans.

§ 3.

ECCLESIASTICAL HISTORY.

Ecclesiastical History is divided into the History of the Church; History of Prophecy; History of Providence.

(a) *Of the Church.*

This describes the times of the church militant, whether of persecution, transition, or peace. There is no deficiency of material but its soundness is out of all proportion to its quantity.

(b) *Of Prophecy.*

The history of prophecy consists of two parts—the prophecy, and its accomplishment. It requires an arrangement of the prophecies with their fulfilment through all time, for the confirmation of faith, and the instruction of the Church, as to what remains unfulfilled. Remembering that with God 'one day is a thousand years,' some latitude must be allowed. The work achieved in this study is deficient, and must be executed with wisdom, sobriety, and reverence, or not at all.

(c) *Of Providence.*

This embraces the harmony between God's revealed will and His secret will. Sometimes it pleases God for our better establishment, and the confutation of those 'without Him in the world,' to write His judgments so plainly that

heedless men who run by them in their headlong race are compelled to discern them. Such are the examples of chastisements, deliverances, and blessings. This work engages the labour of many, and therefore cannot be considered as omitted.

§ 4.

Literary History.

Bk. II. 2. There are *Appendices to History*. The external proceedings of man consist of words and deeds. Deeds and words incidental to them form the province of history. Books and writings appropriated to the record of words only are of three sorts: *orations*, *letters*, and *apophthegms*. Orations are pleadings, speeches of counsel, panegyrics, invectives, apologies, censures, and the like.

Letters are of every kind. Those written by wise men are of all the words of man the best, for they are at once the most natural, and most premeditated. So letters of state are the best guides for history.

As for Apophthegms, the loss of Cæsar's book is to be regretted, for his *Commentaries* gave promise that this work would have excelled all others of the same kind. The collections which exist are not happy.

CHAPTER III.

POETRY.

POETRY referred to the IMAGINATION.
- (i) NARRATIVE or *Historical.*
- (ii) DRAMATICAL or *Representative.*
- (iii) PARABOLICAL or *Allusive.*

POETRY is a part of learning restricted by metre (measure of words) but unrestrained in other respects, and it is the offspring of Imagination, which is unfettered by nature or matter.

Bk. II. 13. What Poetry is and its uses.

Poetry has a twofold meaning. It implies (i) *character of style.* As such it belongs to Rhetoric. (ii) It is nothing else but *feigned history* which finds expression both in prose and verse.

It serveth and conferreth to Magnanimity, Morality, and Delectation.

The use of this *feigned history* is to satisfy innate cravings of the soul beyond the possibility of nature. The spirit of man yearns for a greatness, a goodness, a variety, beyond what he finds in nature.

Poetry feigns acts which are grander than reality, more just in retribution, more surprising and more varied in appearance; '*so as it appeareth, poesy serveth and conferreth to magnanimity, morality, and delectation.*'

Poetry was ever supposed to have in it something divine, because it subordinates the outer world to the cravings of the mind, whereas reason bends the mind to the condition of things.

The association of music with this implicated congruity

with nature and pleasure, made poetry esteemed in rude and barbarous times when all other learning was excluded.

The most suitable division of Poetry is into

(i) Poetry Narrative.
(ii) Poetry Representative.
(iii) Poetry Allusive.

(i) The *Narrative* is a mere exaggerated imitation of history, dealing principally with wars and love.
(ii) *Representative* (dramatic) is *visible history.*
(iii) *Allusive* or *Parabolical* expresses some special purpose or conceit.

The last was more in use among the ancients, as the fables of ÆSOP, the sentences of the Seven, and the use of hieroglyphics show; because such a striking method was necessary to men deficient in subtlety of thought; and as hieroglyphics were invented before letters, so parables were in use before arguments.

But there is an opposite use of Parabolical Poesy, viz. to conceal the mysteries of religion, policy, and philosophy, instead of to illustrate them. Such we see authorised in Scripture. Some of the fabulous poetry of the heathens has a felicitous interpretation, as:

The fable of the war between the gods and giants, means that as Earth, their mother, on the overthrow of the giants, brought forth Fame in revenge, so after the suppression of rebellion, malignity, its parent, brings forth libels and slanders. So by PALLAS calling in BRIAREUS with his hundred hands to the aid of JOVE, we learn that so long as kings by wisdom attach the hearts of their people, they need not dread the curbing of their autocracy by mighty subjects. We may learn too from the fable of ACHILLES being brought up by CHIRON the Centaur, partly man and partly beast, the meaning of MACHIAVELLI'S principle,

'that princes should be taught to combine the violence of the lion and the guile of the fox, with the virtue and justice of man.'

But it is more probable that the fable gave rise to the exposition than the opposite, and that the interpretations given to the fables of HOMER were unknown to himself.

In this second part of learning there is no deficiency. Most extensive, it excels the work of philosophy in expressing affections, passions, corruptions, and customs. Nor does it yield in wit and eloquence to the efforts of the orator. But it is time to pass from the Theatre to the Judicial Palace of the mind.

CHAPTER IV.

PHILOSOPHY.

- PHILOSOPHY.
  - § 1. DIVINE (*i.e.* Natural Theology).
  - § 2. NATURAL
    - SCIENCE . .
      - *Physics.*
      - *Metaphysics* (including *Mathematics*).
    - PRUDENCE . .
      - *Experimental.*
      - *Philosophical.*
      - *Magical.*
  - § 3 HUMAN
    - PARTICULAR (individual) as regards the
      - BODY
        - *Medicine.*
        - *Cosmetic.*
        - *Athletics.*
        - *Sensual Arts.*
      - MIND
        - Its *Nature* and
        - *Faculties* as to the
          - *Reason*
            - *Invention.*
            - *Judgment.*
            - *Memory.*
            - *Tradition.*
          - *Will* .
            - *Nature of Good.*
            - *Culture of the Mind.*
    - CONJUGATE (civil) with reference to
      - *Conversation.*
      - *Negotiation.*
      - *Government.*

INTRODUCTORY.

Summary or Primary Philosophy
- Axioms of Universality.
- Transcendents of Entity.

Bk. III. 1.

PHILOSOPHY. Its divisions, and the *Philosophia prima*, which precedes all divisions.

LIKE the waters which come, some from above and some from below, the knowledge of man is inspired by divine revelation, or is informed by the light of nature, *i.e.*, the notions of his mind and reports of his senses. According to these two sources, knowledge is divided into DIVINITY (Theology) and PHILOSOPHY.

In PHILOSOPHY contemplation dwells upon God, or nature, or man himself; whence, *divine philosophy*, *natural philosophy*, and *human philosophy*. For all things are stamped with the triple character of the power of *God*, the difference of *nature*, the use of *man*. These three branches spring from a stem itself capacious, the *philosophia prima*—the *primitive* or *summary philosophy*, which is first to be considered.

1. Divine.
2. Natural.
3. Human.

Whether this science is defective is doubtful. There is a medley of theology and logic, of natural philosophy dealing with principles, and natural philosophy concerned with spiritual life, which is a conglomerate of the contributions from other sciences, and lacks individuality. There is a popular idea that sciences furnish different aspects of the same things. This is easier said than proved. If, for instance, the notions of *quantity*, *similitude*, and *diversity* were philosophically considered, very different lines of inquiry would arise. Whence, for instance, speculating upon *quantity*, is the force of union? how and how far does it engender inherent strength? And, discussing *similitude* and *diversity*, why is iron not attracted to iron—its like—but to the loadstone, which differs from it? Why in all diversities are there *participles* in nature (subjects partaking diverse natures) or ambiguities, difficult to classify? Silence is preserved upon the nature and operation of properties, the force and use of which is repeated in argument. Hence by original or universal philosophy is meant '*A receptacle for all such profitable observations and axioms as fall not within the compass of any of the special parts of philosophy or sciences, but are more common and of a higher stage.*'

Meaning of Primary Philosophy.

That there are many such axiomatic truths may be evidenced by examples. The axiom 'If equals be added to unequals, the wholes are unequal,' belongs to justice as well as to mathematics. The fundamental axiom of syllogistic reasoning is taken from mathematics. That the *quantum*

in nature is eternal is a truth common to natural philosophy and to natural theology. MACHIAVELLI's wise proposition to establish governments by reducing them '*ad principia*,' is a rule in religion and nature as well as in civil administration. Persian magic was a correspondence of the principles and architecture of nature with the rules and policy of government. Harmony and the affections, Music and Rhetoric, Light and Sound, have principles in common.

This *prima philosophia* must in its present condition be considered as defective.

§ 1.

DIVINE PHILOSOPHY OR NATURAL THEOLOGY

Bk. III. 2. is that knowledge of God which may be obtained from the contemplation of his creatures. It is *divine* with reference to the object, *natural* in respect of the light. It convinces *atheism*, but does not inform *religion*. Miracles were never wrought to convince the atheist, because the light of nature is sufficient. Their purpose is to convert the idolater, because the light of nature is insufficient to guide him to the true will and worship of God. Heathenism declares the world to be God's image, and man the image of it. Scripture reveals the world to be the work of God's hands, and man to be the image of God.

The true faith is beyond the province of natural theology. The fable of the golden chain—'that men and gods could not draw down JUPITER, but he drew them up to heaven'—teaches a wholesome moral: that we must not submit the mysteries of God to our reason, but raise our reason to them.

This branch suffers rather from excess of treatment than from deficiency of attention. The commixture of

religion and philosophy has damaged both, making *religion* heretical and *philosophy* fabulous.

Touching the nature of angels and spirits, the Scriptures admit of sober inquiry but forbid adoration, as well as fantastical opinion. The contemplation of the nature, power, and functions of evil spirits is as lawful as to inquire into the force of poisons in nature, though intercourse with them is prohibited. The writers on this subject are numerous, but their speculations are fabulous and fantastical.

§ 2.

NATURAL PHILOSOPHY.

1. *Science.*

If it be true, as DEMOCRITUS says, 'that the truth of nature lies hid in caves,' and as the alchemists say, that the art of VULCAN but abbreviates the processes of nature, so Natural Philosophy may be divided between the *mine* and the *furnace*; or, to speak scholastically, into the *inquisition of causes* and the *production* of effects; *speculative* and *operative*—*natural science* and *natural prudence* (forethought or wisdom). Bk. III. 3.

As in civil matters there is a *wisdom of discourse* and a *wisdom of direction*, so in natural philosophy, and for a part of it we shall revive the term *natural magic* in its old sense of *natural wisdom*.

As there is a connection between Cause and Effect, so there is between the *Speculative* and the *Operative*; but because there are two modes of investigation in philosophy, the *Inductive* ascending from the experiment to the discovery of the law, and the *Deductive*, descending from the law to the invention of new experiments, so we must consider the two parts separately.

Bk. III. 4.

Natural Philosophy is divided into *Physics* and *Metaphysics*. Whilst using the latter term in a sense not generally understood, BACON declares his anxiety to keep to ancient terms, even when his conceptions differ from those hitherto received, and to recede from ancient thought and expression as little as is compatible with truth and the advance of science. He censures ARISTOTLE for coining new terms, and either confusing or extinguishing 'ancient wisdom.' BACON also animadverts upon ARISTOTLE's critical and censorial spirit, showing that 'like master, like man;' as the pupil went forth to conquer all nations, so the master emulated him in conquering all opinions.

Distinction between *Philosophia Prima*, *Metaphysics*, and *Physics*.

Explanation of the meaning BACON gives to *Metaphysics*.

Philosophia prima, or *summary philosophy*, and *Metaphysics* have hitherto been confounded as one. The former is the parent of all knowledge, the latter is a descendant of *Natural Science*. *Summary Philosophy* embraces the principles and axioms common to all sciences, and inquires into fundamental notions (essences) such as *quantity*, *similitude*, *possibility*, &c., and the operation of their relations, to be treated according to their efficacy in nature, not logically. *Natural Theology*, also confused with *Metaphysics*, has been parted off and defined.

Physics contemplate what is inherent in nature, and transitory.

Metaphysics what is abstract and fixed.

Physics deal with nature as it is; *Metaphysics* with causes, explanations, and method.

Natural philosophy has been generally divided into the *inquiry of causes* and *production of effects*.

The former embraces *Physics* and *Metaphysics*.

Physics treat of *material* and *efficient causes*: Metaphysics of *formal* and *final causes*.

(a) PHYSICS: of the material and efficient causes.

Physics occupy the middle place between *Natural History* and *Metaphysics*. Natural History describes the variety of things: Physics the variable or special causes; Metaphysics the fixed and constant causes. Fire, for instance, hardens clay and liquefies wax; but fire is no constant cause of hardness or liquefaction. So Physical causes are both efficient and material. To *physics* pertain three parts. Two refer to the unity of nature, one to its distribution. The first treats of the configuration of things, as 'de mundo;' the second of *principles*, or *originals of times*; the third of the variety of things in substance, quality, and nature.

BACON expresses no opinion as to deficiencies here, nor as to the treatment of these subjects; he only states that they are fields of labour not deserted.

(b) METAPHYSICS (i) of formal causes.

An inveterate prejudice against the possibility of discovering *essential forms* and *true differences*, militates against the notion of *formal* causes. But difficulty is not impossibility. PLATO hit upon a truth when he said that *Forms were the true objects of knowledge*, but lost the fruit of it by regarding *form* as absolutely abstracted from matter, and not determined by it. He spoilt his philosophy also by theological speculation. The keen observer of action, operation, and use of knowledge, may discover the *forms* important to the state of man. Though the forms of complex substances defy investigation, the elements which compose them do not, as in the case of words and letters. To search for the form of a lion, an oak, gold, air, water, &c., would be a vain pursuit, but to investigate the forms of sense, voluntary motion, vegetation, colour, gravity, levity, density, tenuity, heat, cold, &c., which are the essences of all created things, and limited in number, falls within the province of *Metaphysics*.

Form. See p. 5.

Physics take cognisance of the same natures, but as to the *material* and *efficient causes*, not the *forms*. For instance, the mixture of air and water is the *efficient* cause of whiteness in snow, but it is not the *formal* cause of whiteness.

This part of Metaphysics has not been worked at, which is not wonderful, because men pursue their inquiries by a wrong method, and divorce their observation too soon and too widely from the study of particulars.

Useful in two respects.

This part of Metaphysics—*formal causes*—is useful in two respects.

It limits the scope of experience.

First. Because it is the duty and merit of all knowledge to abridge the boundless extent of individual experiences with due regard to truth by uniting the notions and conceptions of sciences, which are like pyramids based on History. So the basis of Natural Philosophy is Natural History. The next stage is Physics, the highest Metaphysics. Whether human inquiry can reach the apex—*the summary law of nature*, we know not. To the depraved, these are but gigantic hills. To those who refer every thing to the glory of God they are a threefold hymn of praise; holy in the description of God's works; holy in their connection; holy in their unity. Excellent was the speculation of PARMENIDES and PLATO that all things ascended to unity. The highest knowledge is charged with the least multiplicity. This appears to be *Metaphysics*, which considers the few simple forms of things, which by their degrees and co-ordinations produce variety.

It gives liberty to man's powers.

Secondly. The study of this part of metaphysics is commended because it emancipates the mind from trammels. By physics men are grooved, and through restrictions are thwarted by accidental impediments. True wisdom has wide choice of means. He that ascertains any *Form* knows the limit of its application to nature, and is less restrained in operation by the nature of the matter or

of the effective cause. The ways of wisdom are not liable to special impediment or accident.

(b) METAPHYSICS (ii) of final causes.

The investigation of final causes has not been so much neglected as misplaced, which has retarded the progress of scientific discovery. The enlistment of final causes in physical inquiries has checked the search into physical causes, and left men content with specious reasons to the prejudice of further discovery. This was the case with PLATO, ARISTOTLE, GALEN, and others. The causes they adduce for the peculiarities of physical organisation fall admirably within the province of *Metaphysics*, but are irrelevant in Physical investigation. Further, they act as obstacles to progress. The natural philosophy of DEMOCRITUS, to judge by the fragments which have come down to us, is superior in this respect to the works of PLATO and ARISTOTLE; for they, by the intrusion of *final causes* which they treat logically and theologically have done no little to create barrenness in this field. The two sets of causes *final* and *physical*, are true and compatible—the one declaring an *intention*; the other a *consequence* only. This does not derogate from Divine Providence, but the reverse. For as he is a deeper politician who makes men the instruments of his will without allowing them to divine his purpose, so the Providence of God is glorified by overruling nature, rather than by endowing particular creatures and nations with a knowledge of his aims. It is to be wished that this branch of Metaphysics were duly regulated.

MATHEMATICS.

Mathematics may be ranked under Metaphysics. Bk. III. 6.

Mathematics have been considered as co-ordinate with Physics, and Metaphysics; but it is better to regard them as a branch of the latter. Because the subject of it is *quantity*, not *indefinite* (which belongs to *primary philosophy*)

but *determined*, one of the essential Forms of things, and a fertile cause of effects in nature. Of all forms as we understand them, it is the most abstract from matter, and most proper to Metaphysics, which is the reason why it has been better investigated than those which are connected with matter.

Mathematics also satisfy the craving for generalising. Its exact place in the field of knowledge is not material except for the purpose of a comprehensive glance at the relations the various parts have to one another.

Mathematics are Pure and Mixed.

Pure Mathematics treat of quantity (*abstract* or *determinate*) without reference to Natural Philosophy. The sciences are two: Geometry—the science of Space (*quantity continued*), and Arithmetic—the science of Number (*quantity discovered*).

Mixed Mathematics is the application of *quantity determined* to Natural Philosophy. Many sciences cannot be unfolded without this aid, such as Perspective, Music, Astronomy, Cosmography, Architecture, Engineering, &c.

There is no deficiency to report except that men do not understand the great value of mathematics to mental discipline, by sharpening the faculties, fixing the attention, and expanding thought; just as tennis is a useless game in itself, but cultivates quickness of eye and suppleness of limb. BACON predicts that Mixed Mathematics will receive great accessions through the progress of discovery.

§ 2.

NATURAL PHILOSOPHY.

2. *Natural Prudence.*

Natural Prudence, or the practical part of Natural Philosophy is divided into

(i) the Experimental,
(ii) the Philosophical,
(iii) the Magical;

corresponding to the three theoretical divisions Natural History, Physics, and Metaphysics.

(i) *Experimental.*

Many operations have been discovered, some by accident, some by experiment, either contrived for a set purpose (original), or by repeating, imitating, and following the track of others (empirical).

(ii) *Philosophical.*

The knowledge of physical causes cannot but guide to the revelation of new particulars, if practical observation only accompany speculation. Bk. III. 5.

(iii) *Magical.*

The deficiency which is reported of Metaphysics is the same in Natural Magic, which has the same relation to the superstitious counterfeit which exists, as the truth of CÆSAR'S Commentaries have to the truth of the story of King ARTHUR. Of this kind of learning the fable of IXION was a figure, showing that a high and cloudy imagination instead of a laborious search after truth begets credulity in the impossible.

The sciences of Alchemy, Astrology, or those which pertain to Natural Magic, pursue their ends by 'monstrous' means. It is far more likely that he who knows the properties of matter, should superinduce the nature and form of gold by mechanical means, than that a few grains of some liquid should in a moment transmute a baser metal into it; and that he who understands the laws of assimilation, and the relation between body and mind, should by rules of diet and proper medicinal treatment, restore youth and health better than a few drops of an elixir.

Two important suggestions must be added, one by way of advice, the other by way of caution. A catalogue should be made of scientific discoveries at present known to indicate what is wanted and what is possible; and to show the value of experiments not only for their own practical use, but for their higher purpose of stimulating further discovery.

Conclusion of this part.

This review of Natural Philosophy and its deficiencies may differ from doctrine hitherto received and challenge criticism. It will meet with the confirmation of nature, if not of opinion. As ALEXANDER BORGIA was wont to say of the expedition of CHARLES VIII., who overran Italy in five months (1594), that the French came with chalk to mark their lodgings, not with weapons to fight; so it is better for truth to peaceably characterise minds prepared to receive it than to invade those prepared to contest it.

Uncertainties which survive, general and particular. Lists of them necessary.

But there is another view to be taken of Natural Philosophy, whether the character of the investigation be *certain* or *uncertain*. The *doubts* or *non liquets* are of two kinds, *particular* and *general*. ARISTOTLE's Problems are an example of the first. With reference to such there is a general observation to be made. A list of *doubts* has a twofold use—(i) To save philosophy from error and falsehood, by checking the propagation of error from a delusive source; (ii) To prevent the misapplication of industrious research. Both these advantages scarcely counterbalance an inconvenience which is sure to present itself, if permitted, viz. that men labour rather to perpetuate a doubt than to resolve it. That use of knowledge is praiseworthy which labours after certainty, not uncertainty. Such lists of dubious problems are excellent, if only what is found upon examination to be worthless be at once discarded.

To such a catalogue of *doubts* or *problems* might be added a clear account of *popular errors*, especially such as are current in Natural History.

By general doubts is meant the different theories that

have given rise to diversity of sects, schools, and philosophies, such as those of EMPEDOCLES, PYTHAGORAS, DEMOCRITUS, PARMENIDES, and the rest. For though ARISTOTLE would brook no rival, seekers after truth not after dogmatism, value the various modes of accounting for the phenomena of nature. Not that the *real* truth resides in theories as such; for astronomical phenomena can be explained equally by the old geocentric theory and the new heliocentric one. And the ordinary facts of experience may be accounted for by several theories. To discover the real truth requires severe attention of mind beyond this.

As ARISTOTLE says, children at first call every woman mother, till taught the true one by experience; so experience in its infancy will regard any philosophy as mother, till it discerns the true one by maturity. These various schemes have each some ray of light brighter than the rest, and what we want is a collection of these rays out of the ancient philosophies. They should, however, be presented to us entire, and arranged under Articles, not dismembered. This body of philosophy might comprise also modern contributions, such as those of THEOPHRASTUS PARACELSUS, TILESIUS and his scholar DONIUS, FRACASTORIUS, GILBERT our own countryman, and others.

Thus have we dealt with two out of three of the beams of man's knowledge, *radius directus*, referred to nature; *radius refractus*, referred to God and unable to report truly through the inequality of the medium; and *radius reflexus*, whereby man contemplates himself.

§ 3.

HUMAN PHILOSOPHY (*Humanity*).

The most important part of knowledge is the great end of it—'the knowledge of ourselves'—a part of Natural Philosophy, it should be remembered, for our schemes of division are like veins, not separations. Forgetfulness of Bk. IV

the continuity of science has been the cause of unfruitfulness in particular branches, which have suffered from isolation, and attention to it is a corrective of error. The Copernican theory, though irrefutable on astronomical grounds, may yet receive its answer from other sources; and medicine divorced from natural philosophy degenerates into empirical practice.

Human philosophy is either:

(i) *Segregate*, of individuals, or
(ii) *Congregate*, of societies.

The Relation of these.

The Division of *Humanity* follows the division of man. Knowledge which pertains to the *Body*, and knowledge which pertains to the *Mind*. At the outset we must consider the sympathies and concordances between the mind and the body, which being interwoven cannot be properly assigned to the Sciences of either.

This consideration is twofold: how one discloses the other—*Discovery*: how one works upon the other—*Impression*.

(a) *Discovery*.

Two arts which spring from the common principle of *prediction* or *prenotion* belong to it. Perverted by superstition they yet have a solid basis in fact and are profitable for use. The first was honoured by the inquiry of Aristotle, the second by that of Hippocrates. The first is *Physiognomy*, which discovers the disposition of the *Mind* by the lineaments of the *Body*. The second the *Exposition of Natural Dreams*, which discovers the *state of the Body* by the *imaginations of the Mind*. In the former there is a *deficiency*. For though it treats of the *factures* (features) it omits cognisance of the *gestures*. The first disclose the general inclination of the mind: the latter betray the par-

ticular bent of the will. Persons of keen observation are by these means enabled to detect dissimulation to the profit of their business.

(b) *Impression.*

This, which comprises the reciprocal influence of mind and body has not been reduced to an Art. The influence of body on mind has fallen within the sphere of medicine and religion, as well as of superstition. Physicians affect to cure the infirmities of mind as well as those of body, for health depends upon both. But the minute regulations of rigid sects and Mahometans go too far. Religious observances of the ceremonial law, and fasting, are due to the admitted fact that the mental disposition is influenced by the condition of the body.

This fact is acknowledged by all wise physicians who regard the *accidentia animi* as potent in assisting or retarding the cure of the patient. But to render this investigation into the harmony of body and mind complete, it would be necessary to discover and define the organs and seats of the different faculties—a science which has been attempted but controverted. PLATO's idea of seating the *understanding* in the brain, *animosity* in the heart, and *sensuality* in the liver, though fanciful is not to be despised.

Proceeding from this consideration of our complex Bk. IV being, we come to:

SEGREGATE.

1. Human Philosophy regarding the Body.

- ART
  - MEDICINAL
    - Conserving of Health.
    - Cure of Diseases.
    - Prolongation of Life.
  - COSMETIC, or of Decoration.
  - ATHLETIC, or of Activity.
  - VOLUPTUARY, as
    - Pictures,
    - Music, &c.

(*a*) *Medicinal Art*, the Art of Cure.

The Division of the subject follows the division of what is good pertaining to it. This is of four kinds: *Health*, *Beauty*, *Strength*, and *Pleasure*. Whence four branches of Knowledge: *Medicine*, or the Art of Cure: *Cosmetic*, or the Art of Decoration: Athletic, or the Art of Activity: and Voluptuary, or the Art of Pleasure, which TACITUS calls '*eruditus luxus*.'

Of all things in nature, man's body is most susceptible of *remedy*. But this *remedy* is most susceptible of *error*. The subtlety of the subject renders the risk of failure proportionate to the possibility. Hence the necessity of exactitude in the inquiry.

The Ancients entertained a fanciful opinion, that man was a *microcosm*, an abstract or model of the world comprising 'correspondences or parallels' to all varieties of things in the universe. Setting aside this theory of PARACELSUS and the Alchemists, it is true that of all facts in creation man's being is the most complex. Each order in nature, the elements, the vegetable world, the animal kingdom, man, subsists on the lower, and as we ascend the scale, variety in preparation of food, adaptation and organic structure increases, so that the human body is the most composite of all things. Not so the soul, which is the simplest of essences.

This delicate and variable organisation renders it proportionately liable to distemper. The poets conjoin Music and Medicine in Apollo, because the office of the latter is to reduce this curious instrument of man's body into Harmony. Its various complications render their treatment conjectural, and conjecture opens the door wide to imposture. Almost all other Arts and Sciences are judged by the *treatment* of the production, not by the issue. The

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lawyer is estimated by his power in pleading, not by the result of the case. The captain by his skill in navigating, not by the fortune of the adventure. The physician and politician, on the other hand, by the issue of the event. No one stops to inquire whether the patient died or recovered—whether the state was preserved or ruined by art or by accident. Hence the impostor is often prized before the man of science, and the mountebank and witch are preferred to the physician. This folly is exhibited by the poets, when they make ÆSCULAPIUS and CIRCE brother and sister, both children of the Sun.

The result of this is that physicians finding that mediocrity and proficiency in their art make no difference to their profit and reputation, apply themselves to some other art or practice as well. They shine better as antiquaries, poets, humanitarians, statesmen, divines, and in other spheres. But the reason of this is a great deal of sloth and negligence. It is not due to incapacity, for we know how potent this is over every variety of *matter* or *form*. Men can recollect variety of countenance; with a few simple pigments reproduce endless diversity of colour; and reduce the endless combinations of verbal sounds to a few simple letters. It is the depth or distance of the object of thought that causes confusion, and the difficulty of comprehension. As with the eye, so with the mind, proximity is necessary to distinctness and definite outline. The remedy lies not in strengthening the organ, but in learning and using the true approaches and avenues of nature.

So would the physician's art be ennobled, foreshadowed by the poets when they made the Sun the fountain of life, the parent of ÆSCULAPIUS; and honoured by the Saviour's example, who made the body of man the object of His miracles, and the soul of man the object of His doctrine.

The profession of Medicine has been more affected than cultivated, and but little advanced, because the direction of

the course of this study has been circuitous and not progressive. There is much repetition, little advance.

Definition.

Medicine considers *the causes of disease* with the *occasions* and *impulsions*; the diseases themselves, with their accidents: *cures*, and *preventions*.

Some few palpable defects out of many may be stated.

1st Defect. Pathology.

The History of medical cases is defective. Physicians are not like the lawyers, for instance, who report and collect cases for the direction of future judgments. This History need not be so wide as to include trifles, nor so narrow as to exclude all but wonders. Many cases which possess nothing new in type present novelty of treatment. The field of observation should be cultivated and enlarged.

2nd Defect Anatomy.

Anatomical inquiry is very defective. It stops at an enumeration of the *parts*, *substances*, *figures*, and *collocations*. It does not press investigation into *diversities* of the *parts*, *secrecies* of the *passages*, *seats* (or *nestlings*) of the *humours*, *characteristics* and *symptoms* of *diseases*. The reason of this is because observation does not furnish adequate materials for Comparative Anatomy.

First, as to the *diversities of the parts*.

There is no doubt that the *facture* (feature) or inward organisation is as varied as the outer: this is the *cause continent* (ample) of many diseases.

Escaping observation they disagree with the *humours*, which are not to blame, but the part affected. The remedy for this is not in alterative medicine, but in diet.

Next, as to the *passages* and *pores*.

It was long since noted that they escaped the grasp of Anatomy, because the most subtle are closed and latent in dead subjects, though manifest in the living. Hence though CELSUS reproved *vivisection*, yet for the benefit of mankind it might be restricted to animals.

Then as to the *humours*.

They escape the notice of Anatomies, or *purgaments* (purgatives), though most important to their seat and special affections.

Lastly, as to symptoms and consequences.

Imposthumations (tumours formed in any part of the body by the *humours* withdrawn from the other parts), *exulcerations*, *discontinuations*, *putrefactions*, *consumptions*, *contractions*, *extensions*, *convulsions*, *dislocations*, *obstructions*, *repletions*, together with all unnatural substances, such as *stones*, *carnosities* (wens) *excrescences*, *worms*, &c. Such ought to have been the subject of anatomical investigation, and collected instances should have been carefully noted, both *historically* in the order of their occurrence, and *scientifically* with reference to the diseases and symptoms to which they gave rise.

3rd Defect. Despair of Cures.

The next great defect is the tendency to regard cases as incurable, without sufficient inquiry. More die under doctors' hands than a Roman proscription destroyed. This becomes a positive law of neglect, so that ignorance is exempted from discredit.

The office of a Physician is not only to restore health, but to mitigate pain, and that not only with a view to the recovery of the patient, but to soothe his exit from life.

AUGUSTUS CÆSAR was wont to wish for the *euthanasia* which subsequently fell to the lot of ANTONINUS PIUS. When the life of EPICURUS was despaired of, he drowned his senses by copious draughts and *ingurgitation* (greedy swallowing) of wine. Whence the epigram—

'Hinc Stygias ebrius hausit aquas.'

'He was not sober enough to taste any bitterness of the Stygian water.' On the other hand, physicians make it a

religious scruple to stay with the patient, instead of employing their skill to assuage the pains and agonies of death.

4th Defect. Confusion of Remedies.

In considering the cures of diseases, there is a defect in the *receipts of propriety* (prescriptions *proper* to particular cases). Physicians have neutralised the results of tradition and experience by their *magistralities* (a term used by chemists—'a *preparation whereby the whole, or nearly the whole, of any body, by the help of some addition, is converted into a body of a different kind*'), changing recipes at their pleasure. Except a few general remedies, such as treacle (not *sugar*, but *a composition of the parts of a viper good for the cure of serpent-bites and other medicinal purposes*), mithridate (from King MITHRIDATES' antidote, a medicine of general use), and, of late, *diascordium*, they leave none alone. Preparations sold in shops are for general, not special use. And this is why empirics and old women succeed at times better than learned physicians, because they stick religiously to their nostrums. There is a fault here that medical men have not contrived, partly from their own experience, partly from reported cases, partly from tradition, experimental diseases for the cure of particular diseases besides their own (*magistral*) dogmatic prescriptions. The best physicians are those who being learned, are not deaf to the voice of traditional experience, or being empirics, defer to scientific method.

In speaking of the preparation of medicines, it is strange, considering how mineral remedies are extolled, and as outer applications are safer than medicines, that no one has thought of artificial mineral baths, which could be contrived of different degrees of strength for a variety of purposes.

Another defect is that the prescriptions in use are too compendious to attain their end. It is vain to imagine that any medicine is potent enough to work with great effect upon the body of man. It would be a marvellous speech

which, spoken once or oftener, would reclaim a man from a vice of nature. Order, pursuit, obedience, and interchange of application are the powerful agencies of nature. These imply more exact knowledge in direction, and more rigid obedience in observance, but amply repay them. The daily visits of the physician impress us with the belief of method and design in the cure. Closer examination shows that each day's work is from hand to mouth, without forethought or purpose. Not every superstitious prescription is effectual, however, any more than every straight way leads to Heaven. But truth in direction must precede strictness of obedience.

(*b*) *Cosmetic Art*, the Art of Decoration

Has particulars which belong to society, and others which are effeminate. Cleanliness and neatness of attire commend themselves from respect to God, to society, and to ourselves. *Adulterate decoration by painting*, excessive vanity of apparel, and effeminate trimming of hair, are to be condemned.

(*c*) *Athletic Art.*

We use the term *Athletic* in a comprehensive sense, as embracing every pitch of excellence to which the body may be brought, whether of *Activity* or *Patience.* To *Activity* belong *Strength* and *Swiftness.* To *Patience* appertain *endurance* of want and *fortitude* under suffering. The practice of these things is known, but not their philosophy. Possibly because they are regarded as a natural gift, or as the result of habit. Moderation in their use is recognised, but extraordinary proficiency generally subserves the purpose of mercenary ostentation.

(*d*) *Voluptuary*, Arts Sensual.

The chief want here is of laws to repress them. It has been well observed that *while states and commonwealths have been growing, arts military have flourished; when*

settled and in maturity, arts liberal; when in their decline, arts voluptuary. It is to be feared this age, being upon the descent of the wheel, inclines to the last. *Practices jocular* come under this division, for it is a pleasure of sense to deceive sense. Games of recreation belong to education.

II. Human Knowledge concerning the Mind.

The knowledge which respects the Mind is of two kinds.

1. Intellectual, concerning the Understanding and Reason.
2. Moral, concerning the Will, Appetite, and Affections.

The former establishes the Position or *Decree*: the latter, the Action or *Execution.*

Of the Imagination.

Imagination plays the part of an Agent (or nuncius) in both spheres, judicial as well as ministerial. Sense refers to Imagination before Reason judges, and Reason confers with Imagination before Action commences, for Imagination precedes Volition. Janus like, it has a double face. One of *Truth* towards the side of *Reason*, the other of *Good* towards the side of *Action.*

Imagination is not only a medium, but exercises its functions independently. Aristotle well said 'That the mind hath over the body that commandment which the lord hath over a bondsman; but that *Reason* governs the *Imagination* (ὄρεξις, appetite) as a magistrate does a free citizen, who may rule in his turn.'

In matters of Faith and Religion we exalt the Imagination above the Reason, whence the approaches to the mind

through types, parables, visions, dreams, and the like. The persuasion of eloquence which captivates Reason is decked by Imagination.

No branch of Science falls within its sphere. Poetry is its play rather than work. If it be a work, we are not treating of the sciences which Imagination affects, but those which affect it, and so of those similarly related to Reason. Imaginative or Insinuative Reason, which is the subject of Rhetoric, is best referred to the Arts of Reason.

- The 4 Intellectual Arts.
  - i) Inquisition or Invention of
    - Arts and Sciences.
    - Language
      - (i) Preparation or Provision.
      - (ii) Suggestion or Topics
        - General.
        - Particular.
  - (ii) Examination or Judgment by
    - Induction.
    - Syllogism
      - 1. Reduction
        - Direct.
        - Inverse.
      - 2. Knowledge of Elenches.
        - Analytic Art.
        - Sophisms.
        - Elenches of Interpretation of Terms.
          - Majority.
          - Minority.
          - Priority.
          - Posteriority
          - Power.
          - Act, &c.
        - Idols or Impressions from the
          - 1. General nature of man; or, *Idola Tribûs.*
          - 2. Individual Temper; or, *Idola Specûs.*
          - 3. Imposition of word and names; or, *Idola Fori.*
          - 4. Specious theories; or, *Idola Theatri.*
  - (iii) Custody or Memory.
  - (iv) Elocution or Tradition.

1. THE INTELLECTUAL.

The Rational part of Knowledge is to most men most uninviting, by reason of its subtlety and dryness. Their taste, like that of the Israelites of old who preferred the fleshpots of Egypt to manna, would rather feed upon what is conversant with the details of existence, such as civil history, morality, politics, and the like.

The science of Reason is the key of all other knowledge, as ARISTOTLE says 'that the hand is the instrument of instruments, and the mind is the form of forms.' So is this the *Art of Arts*, not only directing, but strengthening. Just as the practice of the archer improves his aim and strengthens his pull at the bow.

The ends of knowledge are four: to *discover*, *sift*, *retain*, and *impart*. So the arts must be four: the *Art of Inquiry* or *Invention*, the *Art of Examination* or *Judgment*, the *Art of Custody* or *Memory*, and the *Art of Elocution* or *Tradition*.

§ 1.

INVENTION.

The Art of Invention or Discovery is of two kinds:—

(i) Of *Arts and Sciences*.
(ii) Of *Language*, or the *vehicle of their communication*.

(i) OF ARTS AND SCIENCES.

There is a deficiency in these, similar to the absence of ready money in the inventory of the effects of one deceased. The new world would never have been discovered without the mariner's compass; so discovery in the sciences cannot be made without the art of discovery itself being grasped.

There is great defect in the *method* of discovery, nor is it provided by Logic.

The sphere of Logic is beyond *matter*. She accepts this, '*Cuique in sua arte credendum.*' CELSUS, speaking of the empirical and dogmatical sect of physicians, remarks that medicines were first discovered, and then the principles of medicine were investigated, not the reverse; and PLATO, in his *Theætetus*, notes well that *the pith of all sciences which distinguishes the artsman from the novice lies in the middle propositions, which in each special branch of knowledge are derived from tradition and experience.*' 1. Not provided by Logic.

This discovery is referred rather to *chance* than to *Art*, to beasts and reptiles rather than to men; and as the ancients were prone to deify inventors, it is no wonder that the Egyptian idols were beasts and not men.

The Greeks indeed refer discovery to man, yet it is more reasonable to believe that PROMETHEUS first struck the flint and then wondered at the spark than that he expected a spark. The West Indian, thinking differently, having no flint, differed in his mode, and rubbed two sticks together. So it is that men refer to animals and chance rather than to logic, for the discovery of the Arts and Sciences. VIRGIL describes a similar method of discovery when he attributes the slow discovery of the various arts to use aided by reflection. This process is common to brute beasts, driven by necessity to practise some particular thing. What taught the raven to get at the water by dropping pebbles into a hollow tree to make it rise? or the bee to find its way home honey-laden? or the ant to nip the ears of corn to prevent them sprouting? This slowness and difficulty places us among the Egyptian gods, leaving nothing to the faculty of reason and the duty of art in the pursuit of discovery.

Logical Induction with the ancients was vicious. They reversed the correct method, abased and traduced Nature. 2. Nor by Induction.

Attention to the natural operations of the mind will show that these manage an induction much better than the philosophers describe it. To infer from an enumeration of particulars, without taking cognisance of exceptions, is not to infer at all. It is just the same as if SAMUEL had contented himself with the sons of JESSE before him, and omitted the absent DAVID.

This blundering is so gross that it would not have been possible for the subtle intellects which have managed these things, to have offered it to mankind, had it not generalised too rapidly, been too imperious and dogmatical, and too neglectful of instances. Such philosophers used them as subservient to their preconceived opinions, rather than for what they could derive from them. The same snare besets human and divine truth. In searching for the latter men cannot condescend to become as little children. In pursuing the former, the true inductive method is cast aside as the work of dotage or childhood.

3. Syllogism will not help discovery.

The syllogistic process may be useful in morality, law, and divinity; it is inapplicable to nature, even when some principles or axioms have been arrived at by Induction. In argument it is useful, but the laws and operations of nature refuse to be trammelled by it.

Argument consists of propositions: propositions of words: 'words are but the conventional tokens or marks of popular things.' These notions may be fallacious, nor will the laborious work of inference, nor the study of the truth of propositions correct the fundamental error which lies in the things themselves. Hence many philosophers denied the certainty of knowledge, and averred that our knowledge extends only to appearances and probabilities—*phenomena*, not *facts*.

The uncertainty of SOCRATES may have been ironical, or for the purpose of enhancing his knowledge, and with

the later Academy which CICERO joined, this principle of hesitation was sincere. It was a school, most favourable to the cultivation of eloquence and dialectic skill, and that for an object of pleasure rather than for a set purpose. Yet many were more sincere in their efforts. Their error was, that they regarded delusion as due to the senses rather than to the weakness of their intellectual powers, and to their method of induction and inference. The senses in their place as subservient aids are very sufficient to certify and to report truth. This should not dishearten, but stimulate us to seek help, for no one, be he ever so skilful, can draw a straight line or perfect circle, which he can easily do with the help of a ruler or a pair of compasses.

BACON here expresses his intention of dealing hereafter with the subject of *scientific discovery*. He states that he has already prepared a treatment of it in two parts—'*Experientia literata*,' by which he intends the *methods of experiment*, and '*Interpretatio Naturæ*,' which forms the subject of the *Novum Organon*.

(ii) OF LANGUAGE.

Speech is not true discovery.

Discovery by speech or argument is not true discovery; for to *invent* is to discover what we know not—not to recover what we do know. To speak truly, it is no *invention*, but an application of something we already know. Hence it succeeds *judgment*. It does not precede it. But as deer can be chased in an enclosed park as well as in a boundless forest, so it may be called an *invention*, if its aim be understood to be the application, not the amplification of our knowledge.

There are two courses by which to acquire this ready use of knowledge; (a) PREPARATION; (b) SUGGESTION.

(a) *Preparation.*

Bk. V. 3. '*Arguments may be beforehand framed, and stored up about such things as are of frequent incident, and come into disceptation (dispute).* This we call the art of preparation.'

This can scarcely be termed a *part of knowledge*, as it depends upon *diligence* rather than upon *artificial conditions.*

ARISTOTLE ironically divides the Sophists of his day, comparing them to shoemakers, ignoring their craft, but having their shops full of shoes to fit all sizes and shapes. If however, a shoemaker only works to order, without ready supply, he will fail in drawing custom. Our LORD, speaking of divine knowledge, compares 'the kingdom of heaven to a good householder that bringeth forth both new and old store.' The most ancient writers on Rhetoric advise the preparatory practice of handling the most useful argument pro and con. CICERO prescribed the plan as the best way to acquire readiness, and DEMOSTHENES prepared openings for the variety of pleadings that might occur.

The subject however falls under Rhetoric as well as under Logic, and to the former it is referred.

(b) *Suggestion.*

Topics general

By this we mean '*that it may be designed and pointed out, as it were by an index, under what heads the matter may be conveniently sought.*' These heads we call *Topics.* They serve the twofold purpose of strengthening *Argument* and guiding the *Judgment.* They not only enable us to readily produce our knowledge, but are suggestive of inquiry. They show us not only what to assert, but what to ask.

and particular.

Topics are of two kinds, general and particular. Of the general we have spoken. These places of *inquiry* and invention appropriate to particular subjects and sciences, are certain mixtures of Logic and the matter of particular

sciences. Some writers have slightly touched upon them, but not handled them worthily. The art of discovery in science grows with discovery. It is not perfected at once, but by degrees. Like the road of a journey, progress not only secures the ground passed over, but opens out a further prospect.

§ 2.

THE ART OF EXAMINATION OR JUDGMENT. Bk. V. 4.

(a) *By Induction.* (b) *By Syllogism.*

By Induction.—Judgment, or the Art of Judgment, handles the nature of proof or demonstration. In this Art of Judging a conclusion is inferred, either by Induction or Syllogism. We judge by induction, for by the same operation of the mind, what is sought when found is judged.

Judgment by induction is *immediate* experience (that is, inference without a *middle term*): but syllogism is *mediate*. The discovery of the middle term is one thing; the judgment of the consequence another.

By Syllogism.—Syllogism on account of its attractiveness has been favoured with laborious attention. The mind of man delights in certainty. As ARISTOTLE lays down that in all motion there is some point quiescent, explaining the fable of ATLAS supporting the world on his shoulders, as meaning the poles on the axle-tree of heaven as an axis by which the revolution is accomplished, so men love some fixed principles round which their various disquisitions may turn.

1. JUDGMENT DEFINED.

The art of judgment is but the reduction of propositions to recognised principles in a middle term. The middle term is a matter of choice. The reduction is of two kinds, *Direct* and *Inverse*. Direct when the proposition is reduced. Judgment defined.

to the principle: this is called *Ostensive Reduction*. Inverse, or *per incommodum*, when the contradictory of the proposition is reduced to the contradictory of the principle; this is called pressing an absurdity (or *reductio ad absurdum*)—the number of propositions is to be the same as the number of degrees the proposition is removed from the principle.

2. Methods of Judgment

are *two*:

(i) one to establish inference by *form*, deviation from which enables us to detect error. This branch of Logic is termed *Analytics*.

(ii) The exposition of *fallacies*. This branch deals with Elenches. For the subtler forms of Fallacy, as Seneca says, are like 'juggling feats,' of the deceptiveness of which we are conscious, though we cannot explain them, and besides reducing an opponent to silence, they abuse his judgment.

3. Of Elenches.

Elenches, refutations of an argument, are well discussed by Aristotle, and better illustrated by Plato in the persons of the Sophists themselves, and by Socrates, who advancing no position himself invalidates that of his opponent by expressing all the forms of objection, both fallacy and *redargution* (refutation).

The use of Elenches.

Though the use of *fallacies* or *sophisms* for *redargution* (refutation) is an improper one, yet it possesses some advantage in controversy; for the weaker disputant, like the hare, has his advantage in the turn, which these fallacies supply, whereas the orator, like the greyhound, excels in the race.

Fallacies.

This doctrine of *Elenches* is capable of wider application; for the discussion of the common adjuncts of essences, which is sometimes referred to Logic and sometimes to Metaphysics, is but an *Elench* or *Sophism*. The great

Fallacy of all Fallacies being *Equivocation* or *ambiguity of words*, the true and practical use of subtle speculations into *majority*, *minority*, *priority*, *posteriority*, *identity*, *diversity*, *possibility*, *act*, *totality*, *parts*, *existence*, *privation* and the like, are only so many wise cautions against *ambiguity* in speech.

So also *Categories* or *predicaments* are but cautions against faulty *division* and *definition*.

But *judgment* is affected more by the force of the *imagination* than by the subtlety of the *illaqueation* (entanglement). This more properly belongs to Rhetoric.

4. Fallacies in the Mind.

Doctrine of the 'Idols.' [1]

Far more important are the fallacies which delude the understanding *generally* and not *particularly*.

The mind of man is not like a clear glass, which reflects the rays of light truly, but like a mirror which distorts them and requires first to be rectified.

1. Idola Tribus=Idols of the Tribe,

'*are the false appearances that are imposed upon us by the general nature of the mind.*'

To illustrate this:

(i) Take the position which lies at the root of all superstition:

'That to the nature of the mind of all men, it is consonant for the *affirmative* or active to affect more than the *negative* or privative,' so that a few times hitting countervails more times missing—a little presence avails more than much absence.

[1] Hallam was the first to point out the mistake which all modern writers have made respecting the word *idol* as used by Bacon; which does not mean *idol*, but *false appearance* (εἴδωλον).

(ii) Or take another instance:

'The spirit of man being of an equal and uniform substance, doth usually suppose and feign in nature a greater equality and uniformity than there is in truth.' Thus mathematicians cannot rest without reducing the motions of celestial bodies to circular orbits, rejecting spiral lines and eccentrics. Hence, whereas there are many things in nature '*monodica* (*μόνος, δίκη*), *sui juris*,' the mind of man will affiliate them, and reduce them to law. So they have feigned an element of fire 'to keep square with earth, water and air, and the like.'

It is incredible how many fictions and fancies this habit of generalising has imported into natural philosophy. This very fancy—'that it should be thought that Nature doth the same things as man doth'—is not much better than the Heresy of the *Anthropomorphites* (a sect which flourished in the fourth and tenth centuries; their distinctive doctrine was that as God was said to have made man in His own image, therefore the Deity is clothed in human shape: Mosheim, *Eccles. Hist.* cent. x. pt. ii. ch. 5), or the earlier opinion of the *Epicureans*, who supposed the Gods to be of human shape.

According to such views, God should have arranged the stars symmetrically, whereas one cannot detect any figurate arrangement. *So different a harmony is there between the spirit of man and the spirit of nature.*

2. Idola Specus = Idols of the Cave,

'*are derived from the Individual Complexion of every particular in respect of mind and of body; as also from Education, Custom, and fortuitous events which befal every man.*'

Plato's Cave will illustrate what we mean. If a man were kept from youth to age in a dark subterranean cave, and then suddenly presented to the view of the majesty of heaven, and adornment of the world, how many strange imaginations would come into his mind!

So we live in the view of Heaven. Our spirit is enclosed in *the cave of the body*, and the specious appearances of custom, education, opinion, minister infinite images of errors. So men stumble 'in seeking sciences in their own proper world, and not in the greater world.'

3. IDOLA FORI = Idols of the Market-place,

'*are most troublesome, which, out of a tacit stipulation amongst men, touching the imposition of words and names, have insinuated themselves into the understanding.*'

Words have a common acceptation according to convention. When a more precise meaning is attached to them, confusion arises. Definition is the cure for this; but this evil attends definition, that, being composed of words, they are liable to the same error. Words of art, stamped with the authority of the learned, may sometimes correct the evil, and exact definitions, premised at the outset, may check it. But all this does not secure us from the abuse to which words are liable. So we must have a new kind of remedy. Definitions.

4. IDOLA THEATRI = Idols of the Theatre.

'*These are fallacies originated by depraved theories or philosophies and perverse laws of demonstrations.*' These may be postponed.[1]

[1] Before laying down the rules of his method, BACON proceeds to enumerate the causes of error—the *Idols*, as he terms them in his figurative language, or false divinities to which the mind had been so long accustomed to bow (see p. 115 *note*). He considered this enumeration as the more necessary that the same Idols were likely to return even after the reformation of science.

The Idols he divides into four classes, viz.:—

IDOLA TRIBUS. . . .	Idols of the Tribe.
IDOLA SPECUS. . . .	Idols of the Den.
IDOLA FORI	Idols of the Forum.
IDOLA THEATRI	Idols of the Theatre.

1. *The Idols of the Tribe* are the causes of error founded on human nature in general. 'The mind,' he observes, "is not like a

One part of judgment deficient.

One part of judgment, of great excellency, is deficient. ARISTOTLE notes it, but pursues it no further—*the application of different kinds of proofs to the differing kinds of subjects.*

plane mirror, which reflects the images of things exactly as they are; it is like the mirror of an uneven surface, which combines its own figure with the figures of the objects it represents.'

Among the *idols* of this class we may reckon the propensity which there is in all men to find a greater degree of order, simplicity, and regularity than is actually indicated by observation. Thus, as soon as men perceived the orbits of the planets to return into themselves, they immediately supposed them to be perfect circles, and the motion in those circles to be uniform; and to these hypotheses the astronomers and mathematicians of all antiquity laboured incessantly to reconcile their observations.

The propensity which BACON has here characterised may be called *the spirit of system.*

2. *The Idols of the Den* are those which spring from the peculiar character of the individual. Besides the causes of error common to all mankind, each individual has his own dark cavern or den, into which the light is imperfectly admitted, and in the obscurity of which a tutelary idol lurks at whose shrine truth is often sacrificed.

Some minds are best adapted to mark the differences of things, others to catch at the resemblance of things. Steady and profound understandings are disposed to attend carefully, to proceed slowly, and to examine the most minute differences; while those that are sublime and active are ready to lay hold of the slightest resemblances. Each of these easily runs into excess; the one by catching continually at distinctions, the other at affinities.

3. *The Idols of the Forum* are those which arise out of the intercourse of society, and those also which arise from language.

Men believe that their thoughts govern their words; but it also happens by a certain kind of reaction, that their words frequently govern their thoughts. This is the more pernicious that words being generally the work of the multitude, divide things according to the lines most conspicuous to vulgar apprehensions. Hence, when words are examined, few instances are found in which, if at all abstract, they convey ideas tolerably precise and refined.

There are but four kinds of demonstrations :—

(i) *By the immediate consent of the mind or sense.*
(ii) *By Induction.*
(iii) *By Syllogism.*
(iv) *By Congruity* (called by ARISTOTLE, demonstration in orb or circle, *i.e. downright*, and not from more known notions).

Each of these demonstrations has its best use in special subjects belonging to science. The distributions of these demonstrations, according to the analogy of sciences, is deficient.

Thus much concerning the Art of Judging.

4. *The Idols of the Theatre* are the deceptions which have arisen from the dogmas of different schools.

As many systems as existed, so many representatives of imaginary worlds had been brought upon the stage. Hence the name of *Idola Theatri.* They do not enter the mind imperceptibly like the other three ; a man must labour to acquire them, and they are often the result of great learning and study.

(Lewes' 'Biog. Hist. of Philosophy,' vol. iii. p. 40.)

§ 3.

MEMORY OR CUSTODY.

Memory or Custody	Writing.	
	Memory	*Prenotion.*
		Emblem.

Bk. VI. 5.

§ 3. THE ART OF MEMORY.

MEMORY, or the *Art Retentive*, is divided into,—

(i) *The Knowledge of Helps to Memory.*

(ii) *The Knowledge of Memory itself*, which doctrine divides itself into—

(*a*) Prenotion. (*b*) Emblem.

Helps to memory.

The *best help to Memory* is writing. This auxiliary is especially beneficial to *Inductive Philosophy* and the *interpretation of Nature.* For this, the record of phenomena by carefully constructed tables is necessary. And omitting this, nothing is more beneficial to ancient and popular sciences than a *careful Digest of Common Places.* The objection to this, that the habit of carefully analysing is '*a prejudice to learning*,' and '*a slothful relaxation to memory*' only affects *counterfeit knowledge.* On the contrary, it aids original thought, and strengthens the *judgment.* Nevertheless, it is true that the methods and tabular views of common places which exist as yet are only pedantic divisions, *and do not penetrate the marrow and pith of things.*

Memory itself.

The Art of Memory is built upon two Intentions (means), (a) *Prenotion*, and (b) *Emblem.*

(a) *Prenotion.*

Prenotion is '*a precision of endless investigation,*' cutting off beforehand what has no connection with the subject.

This prenotion, preception, or preconception saves the indefinite search after what we would recall to mind, and directs us to seek it in a narrow compass, like hunting fallow deer in a park instead of in a forest.

(b) *Emblem.*

Emblem reduces our conceptions to sensible images or portraiture. That which is more sensible, more forcibly strikes the memory, and is more easily impressed upon it, as we see in the case of animals. But this branch is not so much defective as ill-managed.

§ 4.

TRADITION.

Bk. VI. 1.

- TRADITION.
  - Organ of Speech.
    - Notes of things.
      - Hieroglyphics.
      - Real characters.
    - Speaking / Writing } Grammar.
      - Appendices
        - Metre.
        - Ciphers.
  - Method of Speech.
    - Kinds
      - Magistral (*dogmatic*), and by Probations.
      - Enigmatical.
      - By Aphorisms.
      - By Assertions and Proofs.
      - By Question and Answer.
      - According to Subject handled.
      - According to Knowledge of Recipient.
    - Parts
      - Arrangement of a Whole Work.
      - Limitation of Propositions.
  - Illustrations of Speech. *Rhetoric.*
    - Use and Office
      - Application
        - Of Dictates of Reason to the Imagination.
        - Of Wisdom of Private Speech.
    - Appendix . .
      - Antitheta.
      - Formulæ.
- *Two General Appendices*
  - Critical .
    - Corrected Editions.
    - Interpretation of Authors.
    - Censure of Authors.
  - Pedantical
    - Education of Youth.
    - Caveat against Compendiums.
    - Application of Studies to Quality of Wits.

The fourth kind of rational knowledge concerns the expression or transferring of our knowledge to others, which we will term TRADITION.

Tradition has three parts.

(a) *The Organ of Tradition.*
(b) *The Method of Tradition.*
(c) *The Illustration of Tradition.*

(a) The Organ of Tradition

is either *speech* or *writing*. Aristotle well says, '*Words are the images of cogitations, and letters are the images of words.*'

Yet words are not necessarily the only vehicles of thought. For '*whatever is capable of sufficient differences perceptible to the senses is in nature competent to express thought.*' This is proved by the intercourse of barbarous people, and of the deaf and dumb. The Chinese and other Orientals use characters expressive of *things* and *notions*, not letters or words, therefore they have a vast multitude of symbols.

These symbols of thought are of two kinds.

(i) Those related to the notion by some similitude or congruity. Such are *hieroglyphics* and *gestures*. The *former* anciently used by the Egyptians. The *latter* may be termed *transitory hieroglyphics*.

We may illustrate this by the story of Periander, who, being consulted how to preserve a tyranny newly usurped, bade the messenger report what he saw, and then cut off before him the heads of the tallest flowers, intimating thereby to destroy the leaders of the nobility.

(ii) Those adopted *conventionally*, such as the characters commonly used. Some have indulged in interesting speculations as to the origin of names, but they are fanciful and unprofitable.

This branch of knowledge must be reported as deficient. It may be suggested as a matter for further inquiry, for words are but the tokens used for exchange of thought, and men ought to know there are other media of exchange besides gold and silver.

Grammar.

The consideration of *speech* and *words* has produced the science of Grammar. As man has striven against the

first curse by the invention of the arts, so he tries to obviate the second—*the confusion of tongues*—by the art of Grammar, of more importance to a foreign and especially a dead language, than to the mother tongue. It has a twofold duty:

(i) *Popular*, to facilitate the acquisition of languages.
(ii) *Philosophical*, to investigate the power and nature of words.

Though this branch is not deficient, it is worthy of scientific treatment.

The accidents of words.

Under Grammar, as an Appendix, we ought to consider *Metre*, *Sound*, and *Accent*, with their effects in *Rhetoric* and *Poetry*, wherein men versed in learned tongues stick to the ancient measures, whilst in modern languages as great a licence is allowed to make new metres as to invent new dances; for a dance is a measured pace, as a verse is a measured speech.

Ciphers.

Ciphers, though usually for letters, may be for words, and are of many kinds. The advantages for which they are to be preferred are threefold:—

(i) That they be not laborious to read or write.
(ii) That they be impossible to decipher (without the key).
(iii) And in some cases that they be without suspicion.

The art of *ciphering* has a correlative in the art of *deciphering*, commonly supposed to be unprofitable, but, as things are, of great use. Ciphers well executed will, of course, baffle the decipherer, but people are so unskilful that the weakest ciphers will escape detection.

In enumerating these out-of-the-way pursuits and arts, Bacon suggests that he exposes himself to a charge of ostentation, whereas his sole object is to clear the way, and sow some seed of proficiency in the future.

(b) THE METHOD OF TRADITION

gave rise to a controversy in BACON'S time (between RAMUS, whose method was one of perpetual dichotomies, and others). As words check business, so controversy chokes inquiry, and BACON reports this branch of the knowledge of method as deficient.

Method has been rightly placed in Logic under Judgment. (*This is not usually the case.*) For as the Doctrine of Syllogisms comprehends the rules of Judgment upon what has been discovered, so the Doctrine of Method contains the rules of Judgment upon what is to be delivered. For Judgment follows Discovery, and precedes Delivery.

METHOD is not only of material importance to the use of knowledge, but to its progress. The wisdom in the mode of communicating knowledge consists in preserving continuity, and stimulating progress. Therefore the most real diversity of Method is

(i) *Method referred to use*—Magistral (*dogmatic*).
(ii) *Method referred to progression*—of Probation.

Of probation.

The latter is a barren soil. As knowledge is now imparted, there is a 'contract of error' between teacher and disciple. The former studies the best form to captivate the belief, not to provoke inquiry; the latter desires present satisfaction, not the delay due to investigation. Vain glory leads the author to conceal his weakness. Sloth prevents the disciple from exploring his strength.

Magistral, or for use.

But knowledge imported as well as imparted ought to be delivered in the method of its discovery. No man knows how he came by his knowledge, yet he should sift it to the bottom, and transplant it into another mind, as it grew in his own. With knowledge, as with plants and trees. The stems are useful to the carpenter, the roots to

the planter. As in transplanting trees, we must look well to the roots. Of this kind of treatment the method of mathematics presents us with a fair example. Generally it is neither adopted nor investigated, and must be noted as deficient.

Enigmatical and disclosed.

Another division of Method is into *Enigmatical* and *Disclosed*. The pretext for this is to reserve what is recondite for wits sharp enough to grasp it.

Aphorisms or methods.

A further mode of delivering knowledge is by *Aphorisms* or *Methods*.

It is too much the custom to build an art upon a few axioms, expanding, illustrating, and digesting them into a sensible Method.

Aphorisms, in some respects, excel Methods.

Being the pith of sciences, devoid of illustration, examples, connection, and practice, they powerfully compel observation, and therefore try the writer whether he be superficial or solid.

Whereas, by Methods, a man can make a great show of an art, which, if his knowledge were dissected, would come to nothing.

Lastly: Aphorisms being *broken knowledge*, suggest further inquiry. Methods having *an air of completeness*, induce the impression that a limit has been reached.

By question and answer.

Another mode of delivering knowledge is by *assertion* and *proof*, or by *questions* and *their solutions*. If the last be carried too far, they retard the advance of learning, just as the siege of every little fort delays an army. If the main operations are conducted successfully, these fall of themselves. So teaching should be more dogmatical, less argumentative. Indeed, confutation should only be used sparingly to remove prejudices, and not to minister doubts.

According to subject matter.

Another diversity of Method is according to the subject matter under treatment, some requiring one mode of handling and some another.

Uniformity of method in multiformity of matter is apt to reduce learning to empty generalities. So as particular topics are allowed for invention, particular methods are useful for tradition.

Another diversity of Method to be used with judgment is adapting it to the capacity of the recipient. Those whose conceptions are ordinary are generally understood, and they have only to argue. Those whose conceptions rise above a common standard have to face a double difficulty—first to make themselves understood, then to demonstrate what they have to prove. Hence their recourse to similitudes and paraphrases for the purpose of explanation. In the infancy of learning, when what is now trivial was then new, the world was full of parables. This was specially the case in divine learning, else man would have rejected as paradoxical what was offered to him.

Method according to the knowledge of the receiver.

As a rule, whatever source is not in harmony with presupposition craves the aid of similitudes for illustration.

There are other kinds of Methods commonly received, such as *Resolution* or *Analysis*, *Constitution* or *Synthesis*, *Concealment* or *Cryptic*, which are to be commended, though the least frequent have been touched upon for the purpose of constituting one general inquiry touching the *Wisdom of Tradition*, which seems to be deficient.

Other kinds of method.

Method considers not only the disposition of the argument or subject, but likewise the propositions, not as to truth or matter, but as to limitation and manner. RAMUS did more good in reviving the good rules of propositions than he did in introducing the canker of *dichotomies*. Yet the attempt at the one made him stumble upon the other. He must be an able man, who, in striving to make axioms convertible, avoids rendering them ineffective.

Method considers the limitation of propositions

Method chiefly concerns universal propositions which embrace sciences within their limit. These have not only depth (*i.e.* truth) but longitude, extending from the

and chiefly universal propositions.

greatest generality to the most particular precept, and latitude extending to contact with other sciences. The last shows how far one knowledge ought to intermeddle with the province of another, by the rule which they call καθαυτό, viz., that propositions should be true essentially; the second into what degree of particularity it should descend. This, though more material, is passed over in silence, for certainly somewhat must be left to practice, but how much is worth inquiry. And we see that remote generalities only excite the scorn of practical men.

False method.

Then, too, there is a *Method of imposture*, to deliver knowledge in such a manner that men may rapidly make a show of the learning which they have not. Such was the labour of RAYMOND LULLY in working out his art. (RAYMOND LULLY, the 'enlightened doctor,' was born in Majorca, 1225, studied Arabian philosophy, chemistry, physic, and divinity. He was stoned to death, at the age of eighty, in Mauritania, for preaching the gospel.) His art is like some books of *typocosmy* (a figure or representation of the world κόσμου τύπος) a mass of pretentious verbiage.

(c) THE ILLUSTRATION OF TRADITION: RHETORIC.

Bk. VI. 2.

The *illustration of Tradition* is contained in the science called *Rhetoric*, or the *Art of Eloquence*. This subject is excellent and well worked out, inferior to wisdom, which helps a man to renown, but of more force in active life. The labour of ARISTOTLE and the experience of CICERO pre-eminently distinguish them in their works on Rhetoric. The perfection of the precepts, aided by the illustrations afforded by DEMOSTHENES and CICERO, has doubled the progress in this branch of science. The deficiencies to be noted are rather found in some collections than in the rules and use of the art itself.

Definition of rhetoric.

The duty and office of Rhetoric is to apply reason to imagination for the better moving of the will.

Reason is disturbed in its exercise by three causes:

(i) By *illaqueation* (entanglement) or *sophism*, which pertains to Logic;

(ii) By *imagination* or impression, which pertains to *Rhetoric*;

(iii) By *passion* or *affection*, which pertains to Morality.

In intercourse we are worked upon by cunning, by importunity, and by vehemence. Within ourselves we are undermined by *inconsequences*, warped by impressions, and transported by passions. The nature of man is so ordered, that the three arts above mentioned are potent not only to disturb it, but also to establish it. The end of Logic is to fortify reason, not to entrap it; of Morality to subordinate the affections to reason; of Rhetoric to stir the imagination for the purpose of assisting it. The abuses of art serve indirectly for caution.

Plato's disparagement of it.

PLATO, prejudiced by his hatred to the rhetoricians of his time, likened Rhetoric to the cookery which spoils good meat, and adjusts unwholesome food to the palate by the aid of sauces. Speech is, however, more conversant with adorning what is good than speciously colouring what is bad. Every man speaks more honestly than he can either do or think, and THUCYDIDES remarks of CLEON that he was ever inveighing against eloquence, because he took a base part in political affairs. PLATO, too, elegantly says, *that if virtue could be seen, she would excite great love and affection.* As she cannot be exhibited to the eye of sense, the next best thing is to pourtray her vividly to the eye of fancy.

Utility of rhetoric in quelling the passions.

If the affections were amenable to reason, persuasion would be needless. But the affections are rebellious; good in aspiration, but debased in fact. Reason would be overcome if persuasive eloquence did not detach the imagination from the affections, and, as it were, confederate it

with reason against them. With the affections, as with reason, there is a yearning after good, but affection merely regards the present—reason the future. Hence, when by the eloquence of persuasion, the imagination realises the future as present, reason prevails.

Rhetoric compared with logic.

We conclude, therefore, Rhetoric can no more be charged with colouring what is bad than Logic with sophistry, or morality with vice.

Logic differs from Rhetoric as a close fist differs from an open palm. The former handles reason scientifically, the latter popularly, as it is interwoven in current opinion and manners. ARISTOTLE wisely places Rhetoric between Logic and Civil Knowledge, as participating of both. The demonstrations of Logic are inflexible, those of Rhetoric vary with the audience. A varied treatment of a subject is requisite for different people. So it comes to pass that the greatest orators fail in private address, and by too nice an observance of well graced forms of speech they *leese* (waste) 'the volubility of application (*i.e. facility* of application).'

Deficiencies.

To mention the deficiencies by way of side-remarks. First: The efforts of ARISTOTLE have not been well seconded in endeavouring to *make a good collection of the colours of good and evil*, simple and comparative, which are the *Sophisms* of Rhetoric; as, for instance:

Sophism.

Quod laudatur, bonum; quod vituperatur, malum.

Refutation.

Laudat venales, qui vult extrudere merces.

'*Malum est, malum est, inquit emptor: sed quum recesserit, tum gloriabitur.*'—Prov. xx. 14.

The defects of ARISTOTLE are *three*.

(i) That there be few taken out of many examples.

(ii) That their *elenches* are not annexed.

(iii) That he failed in grasping the full extent of their

use. For many forms of equal signification differ in impression, like piercing that which is sharp and flat by a blow of the same force.

Deficient in *antitheta* and *formulæ*.

Next there is a deficiency in *antitheta* and *formulæ*. *Antitheta* are *theses*, *pro* and *con*. At these men should work wider and harder. Avoiding prolixity of entry, they should show precisely and tersely the threads of argument to be unfolded and amplified upon occasion; as:

Pro sententiâ legis:

Ex omnibus verbis est eliciendus sensus qui interpretatur singula.

Formulæ are apt expressions serving indifferently for different subjects; as for *preface*, *conclusion*, *digression*, *transition*, *excuse*, &c. Such expressions specially adorn and enhance a disquisition: as,

A conclusion in a deliberation.

So may we redeem the faults past, and prevent the inconveniences future.

APPENDICES TO THE ART OF TRADITION.

(α) *Advice to Critics.*
(β) *Of Pedantical Knowledge*, i.e. *wisdom in teaching.*

(α) *Advice to Critics.*

(i) With reference to the correction and editing of Authors. Here rash diligence has worked great mischief. Critics have often assumed as erroneous what they don't understand. As the priest, when he found it written of St. PAUL '*Demissus est per sportam*,' (Acts ix. 25) corrected it *Demissus est per portam*, because he was ignorant of the meaning of *sporta*.

It has been commonly and wisely remarked that *copies most corrected are least correct.*

2. With reference to the explanation of authors. It is not unusual to find commentaries avoiding matter which is obscure, and dilating upon what is plain.

3. Concerns the *times*, which in many cases throw light upon true interpretations.

4. Concerns the brief criticisms of authors, that men may know what books to select for their reading.

5. Concerns the *arrangement*, that men may know how to read methodically.

(β) *Of Pedantical Knowledge*, or wisdom in teaching. This contains that mode of handling knowledge adapted to youth.

1. How to time instruction in various branches of knowledge, what to commence with and what to postpone.

2. How to begin with what is easy and proceed to what is more difficult, and how to adjust the two; for swimming on bladders is one thing, dancing in heavy shoes another.

3. The application of learning to different kinds of understanding. For there are some studies specially adapted to cure special intellectual defects; as mathematics, to rivet the attention of those that are *bird-witted* or flighty. There is a sympathy between the faculties of the mind and certain studies, which remedy their defects.

4. Great judgment must be exercised in the continuance or remission of exercises.

Just as the neglect or cherishing of the young plant is most important to its thriving, so the cultivation and nourishment of the mind in youth is attended with effects nothing afterwards can countervail. Small or mean faculties obtained by education have often produced important results with great men, or in critical matters. As the story told by TACITUS of the two stage-players, PERCENNIUS and VIBULENUS testifies (Tac. Ann. i. 16–22).

In treating of '*Rational Knowledges*,' it must not be supposed that the division followed excludes those commonly received. There are two reasons for altering the mode of dividing the subject.

(i) Because there is a different end in view.

(ii) Because noting the deficiencies necessarily altered the partitions of the rest.

CHAPTER IV.—*Continued.*

PHILOSOPHY.

1. HUMAN KNOWLEDGE concerning the MIND.
2. MORAL, concerning the WILL, APPETITE, and AFFECTION.

Bk. VII. 1.

- MORAL.
  - Simple, or Kinds of Good.
    - ACTIVE, from a desire of
      - *Perpetuity.*
      - *Certainty.*
      - *Variety.*
    - PASSIVE
      - *Conservative.*
      - *Perfective.*
  - Relative.
    - Of Man as a Social Being.
    - Of Man as a Citizen.
  - Moral Culture.
    - 1. What is in our Power.
    - 2. Men's different Characters must be studied.
    - 3. With Age, Sex, Health, &c.
    - 4. Also Affections.
    - 5. Best treated by Poets and Historians.
    - CURES or REMEDIES.
      - Custom, Habit, Education.
      - Emulation, Company, Friends.
      - Reproof, Exhortation.
      - Laws, Books, Studies.
      - Brief Precepts.

THE MORAL FUNCTIONS OF THE MIND.
The APPETITE and WILL.

Ill handled as yet.

SOLOMON says truly '*Ante omnia, fili, custodi cor tuum, nam inde procedunt actiones vitæ.*' (Prov. iv. 23.) Those who have written upon this subject resemble teachers who simply content themselves with placing fair copies of writ-

ing for imitation before their pupils. They expatiate upon *good*, *virtue*, *duty*, *felicity*, as objects to be aimed at, without showing *how*. The excuse for this omission cannot be the question, whether moral virtues are implanted by nature, or result from habit, or the fact that generous spirits are won by persuasion, and the generality of men are influenced by rewards and punishments.

Directions for the pursuit of virtue omitted,

The reason of this is that which has wrecked many barks of science. Men despise what is common, though the pursuit be the part of true wisdom, and are captivated by what is specious, such as subtlety of disputation or eloquence of discourse. Instruction, being for the disciple's benefit, not the tutor's commendation, should be such as to make the former love it.

because men despise it as common.

Neither ought the teachers of mankind to have despaired of the renown which VIRGIL was ambitious of and acquired by the eloquence, wit, and learning he displayed, as well in describing the operations of husbandry as in narrating the exploits of ÆNEAS. So the GEORGICS of the mind, concerning the cultivation of it, are no less worthy than the heroical descriptions of virtue, duty, and felicity.

The main division of MORAL KNOWLEDGE is into

§ 1. THE NATURE OF GOOD.
§ 2. MORAL CULTURE.

Objects of Ethics. Division of the Subject.

§ 1. THE NATURE OF GOOD.

We must consider it as *simple* or *compared*, i.e. *relative*, either the *kinds of good*, or the *degrees of good*. The latter gives rise to endless disquisitions about the *summum bonum*, or *supreme good*, which is resolved for us by the Christian faith. As ARISTOTLE places happiness in hope, so we must embrace the felicity which is by hope in a future world.

Freed, therefore, from this consideration of the *summum bonum*, we can with more steadiness and truth survey the rest of their labours.

As for good, *positive* or *simple*, they have classified it excellently, and described the forms and functions of virtue and duty well, commended them by argument and persuasion, and fortified them against popular errors.

So they have excellently laboured in setting forth the degrees and comparative nature of good, the triplicity of good, the comparison between an *active* and *contemplative* state of life, the distinction between virtue with *reluctation* (resistance) and virtue secured, the struggle betwixt honesty and profit, the balancing of virtue with virtue, and the like.

Yet, if before coming to the received opinions about virtue and vice, they had lingered longer on their causes and connections, they would have thrown much light on what follows. Especially if they had consulted nature they would have been less prolix and more profound. What they have omitted or confused, BACON endeavours to explain more clearly.

Good is either (i) Private, or (ii) Relative.

Good in everything has a double nature, one complete in itself, the other as part of a greater. The latter is worthier, as more extensive in regard. Thus iron has a particular attraction to the loadstone, but a greater one to the earth. And water, which seeks the centre of the earth, will move from it in obeying the higher law of nature.

This double nature of good is much more engraven upon man, unto whom the *preservation of duty to society* ought to be much more precious than the preservation of life. So POMPEY the GREAT, being commissioned to purvey for a famine at Rome, and earnestly dissuaded from embarking in stormy weather, replied, '*Necesse est ut eam, non ut vivam.*' (Plutarch, *Vita Pomp.*)

Christianity exalts relative or social good.

But no philosophy or religion ever so highly exalted the good which is communicative over that which is particular, as Christianity. For we read of one eminent saint who wished himself razed out of the book of life in an ecstasy of love to others. (Rom. ix. 3.) This position

settles most of the controversies with which Moral Philosophy is conversant.

It decides against ARISTOTLE the preference for a contemplative over an active live.

For, all the reasons adduced for the preference centre in the pleasure and dignity of man himself (which, if allowed, would settle the question), not unlike the reply of PYTHAGORAS to some one asking what he was. He said that those who attended the Olympian Games did so from various motives, 'but some were lookers on,' and 'he was a looker on.'

But in the theatre of this life it is reserved only for GOD and angels to be *lookers on*. The Church would never have entertained this question but upon this defence, that the monastic life is not simply contemplative, but either is devoted to incessant prayers and supplications, or to literary work, like MOSES when he wrote the Law when absent so long in the mount. So ENOCH, the first contemplative, endowed the Church with the prophecy which JUDE quotes.

As for contemplative life wrapped up in itself, divinity (theology) knoweth it not.

It decides also the controversy between ZENO and SOCRATES and their followers. The one placing felicity in *virtue* alone, or as influencing society; the other settling it in *pleasure*, to which virtue may be regarded as a handmaid. A third school of EPICUREANS placed it in *serenity of mind*. A fourth, HERILLUS, in effacing the disputes of the mind, removing the fixed nature of good and evil, and esteeming things according to *clearness of the desire* or the *aversion thereof*. This opinion was revived in the heresy of the Anabaptists (*i.e.* the German Anabaptists, who, believing themselves under Divine influence, deemed they had no need of magistracies, distinct ranks of men, or restrictions in marriage.)

It decides the quarrel between the *Stoics* and *Epicureans* as to the nature of Felicity.

It censures the philosophy of EPICTETUS, who made felicity reside in potentiality, lest we should be liable to

It censures the philosophy of *Epictetus*.

the freaks of fortune. Whereas it is a far greater happiness to fail in a virtuous aim on behalf of the general good, than to secure any amount of individual advantage.

So the wisdom of SOLOMON has it 'that a good conscience is a continual feast,' (Prov. xv. 15) showing that the conscience of good intentions, whatever the issue, engenders more lasting happiness than the provision for selfish security and repose.

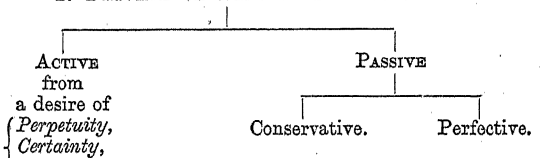
It censures also the error of making Philosophy a profession.

It censures also an error due to the time of EPICTETUS, of making philosophy an occupation or profession, as if the object were, not to resist anxieties, but to avoid the cause of them, and to devise a particular course of life to that end. As the purpose of health is to best discharge the duties of society, not to be chiefly concerned about itself, so that condition of mind is soundest which can best endure temptation and resist perturbations. DIOGENES' opinion is to be accepted, which commended *self-restraint* rather than abstinence, and the subjection of the impulses and desires to the will.

Lastly, it censures withdrawal from business.

Lastly, it censures the unpractical nature of some most ancient philosophers who withdrew from civil business, to avoid rubs and anxieties. Whereas, the resolution of men truly moral should be hardened by opposition, not affected by every slight matter.

1. PRIVATE OR PARTICULAR GOOD. Bk.VIII.



Particular good is either *Active* or *Passive*. A distinction similar to the Roman household terms, *promus* and *condus*, is met with in all things, and best illustrated by the two natural desires of self-preservation and procreation, of which the latter seems to be worthier, just as in nature the heavens, being the agent, are more worthy than the earth, which is the patient.

(a) ACTIVE.

In the pleasures of life, that of generation is greater than that of food. In divine teaching, it is more blessed to give than to receive, and in life no man is so effeminate as not to regard the attainment of a fixed purpose as superior to sensuality.

The pre-eminence of Active Good is shown from two considerations:

1. Our mortality and exposure to the vicissitudes of fortune.
2. The natural craving in man for variety and progress.

1. If our pleasures were certain, the price of them would advance; but the uncertainty of life impels the desire to *secure something beyond the dominion of time.* Hence our deeds and works, for it is said, 'and their works do follow them.' (Rev. xiv. 13.

2. The love for variety is circumscribed by the pleasures of sense. But in the pursuits and purposes of life there is much variety. Of this men are pleasurably sensible in their *inceptions* (beginnings), *progressions*, *recoils*, *re-integrations* (beginning again) approaches to and attainments of their aims.

This *Active Good* is not identical with the good of society, though sometimes they are coincident. For though it generates acts of beneficence, for instance, yet the motive is a man's own power, glory, extension of influence, or establishment, as is manifest when it meets with a contrary subject. For that gigantic state of mind which we remark in such men as SYLLA, and others similar, though of lesser note, who would have all men happy or unhappy just as they are their friends or foes, and who would fashion the world according to their humours, which is the true theomachy (battle with the gods)—this state of mind pretends to active good, though most remote from the good of society, which is greater.

(b) PASSIVE GOOD

Is *conservative* or *perfective*.

To recapitulate what has been said:

Recapitulation.

i. We have spoken of the *Good of Society*, which regards the aspect of human nature, whereof we are members, not our own particular form.

ii. We have treated of *Active Good* as a part of private or particular good, because there is a threefold desire impressed upon all emanating from self-love—one of *preserving their form*, another of *perfecting* their form, and a third of *multiplying* their form; this last we handled by the name of *Active Good*.

We have now to consider the preservation and perfection or elevation of it. The last of these is the highest degree of PASSIVE GOOD.

(β) *Perfective.*

For to preserve with fixity is less than to preserve with progression. Man's approach to divine nature is the perfection of his form. False imitation of this good is the storm of life, while man, prompted by an instinct to raise his general nature essentially, is seduced to apply his efforts partially. Just as a sick man, to find relief, tosses about, as if change of posture would remove an internal complaint; so ambitious men, failing to exalt their nature, are in a perpetual *estuation* (*commotion*) to exalt their place.

Striving after perfection of Form marred by inadequate effort.

(α) *Conservative.*

The good of conservation or *comfort* consists in the enjoyment of what is agreeable to our natures. It seems to be the most pure, yet the lowest of pleasures. In this there is a distinction which has escaped judgment or inquiry. The good of contentment resides either in its sincerity or vigour; the one superinduced by equality, the other by change; the one having less mixture of evil, the other more impression of good. Which is the greater good is a matter of controversy. Whether man's nature be not capable of both, escapes inquiry.

The good of contentment or enjoyment twofold in origin.

The former question was discussed between SOCRATES and a sophist, the former placing felicity in peace of mind, constant and uniform; the latter in much desiring and much enjoying. The sophist declared SOCRATES's felicity was that of a stone. SOCRATES retorted that the felicity of the sophist was the felicity of a man with the itch, who did nothing but itch and scratch. Both have their advocates. Even the Epicureans would generally support SOCRATES, that virtue constitutes a great part of felicity. If so, virtue's function is to efface perturbations rather

SOCRATES and the Sophist.

than to compass desires. While the sophist's position is confirmed by the assertion that the good of advancement surpasses the good of simple preservation, for every desire has a show of progress, even as motion in a circle has the appearance of progression.

The second question, truly solved, renders the first superfluous; for it cannot be doubted that some enjoy the pleasure of enjoyment more than others, and part with it more equably.

The doctrines of philosophers are more cautionary than the nature of things requires. Thus they increase the fear of death by offering to cure it. To make a man's whole life a preparation for death is to enhance the fear of it terribly. So they have sought to make men's minds too uniform and harmonical by not sufficiently training them to contrary motions. The reason for this was to be found in their private and unpractical course of life. Men are to imitate the jewellers, who will remove a flaw if it can be done without grinding away too much of the gem, but otherwise leave it alone. So ought men to procure serenity, but not at the sacrifice of magnanimity.

2. Relative Good.

Man as a *Citizen.* | Man as a *Social Being.*

We now consider Good as it concerns society.

This we may term *Duty.* The term *Duty* is more suitable to a mind well disposed towards others, as the term *Virtue* is more applicable to a mind well formed and composed in itself.

This subject may, at first sight, seem to belong to social science; but it does not, if well considered, for it concerns

the government of self, not of others. As in architecture the direction for framing the building is not the same as the manner of erecting it, or in mechanics the plan of an engine the same as the manner of using it, so the doctrine of men associated differs from that of their conformity to society.

This part of Duty is divided into two parts:

(a) Man as a citizen. (b) Man as a social being.

The first of these, the common duty of every man as a citizen, is well set forth. The second, the special duty of each man in his own vocation and sphere, is more loosely and widely rather than defectively handled. But this is as it should be, for who is equal to the task of discussing the proper duty, virtue, and right of every separate vocation and sphere? It is said, a looker on sees more of the game than one engaged; yet there is no doubt that men can write best about their own professions. The writings of theorists appear to practical men like so many dreams. But there is one fault which attends those who write about their own professions—they are liable to exaggerate their importance. Learning, however, would become more solid and fruitful if active men could or would become writers.

Such a work is the *Basilikon Doron*, touching the duty of a king, a work which BACON says is one of the most sound and healthful writings he had read; for King JAMES has truly pourtrayed in it, not the external glory of an Assyrian monarch, but a MOSES or a DAVID, pastors of their people. Disclaiming flattery, he extols also another work of King JAMES I., *The True Law of Free Monarchies.*

The evils of social life ill handled.

To resume. The proper treatment of this part requires an exposition of the frauds, impostures, and vices of every profession. Where attempted, this has been done equivocally and cynically, and not with judgment to dis-

cover and sever that which is corrupt. SOLOMON says, 'He that seeks after knowledge with a mind to scorn and censure shall assuredly find matter for his humour, but none for his instruction.' (Prov. xiv. 6.) Though deficient, the management of this subject would be one of the best fortifications for honesty and virtue possible. Hence we owe a good deal to MACHIAVELLI and others, who tell us what men do, not what they ought to do. It is not possible to combine the wisdom of the serpent with the innocence of the dove, except we know all about the serpent. So the wicked cannot be reclaimed without the knowledge of the help of evil. For men of corrupted minds conceive that honesty grows out of sermons, schoolmasters' lessons, and men's professions; so that unless you convince them that you know the extent of their corrupt opinions, they despise all morality.

Relative Duties as affecting individuals.

To this section appertains *Relative Duty*, which exists between husband and wife, parent and child, master and servant, the law of friendship and gratitude, the civil bond of commercial, collegiate, and political intercourse, not in their aspect towards government and society, but as regards their influence in moulding the mind of particular persons.

Cases of Casuistry.

Nor is this social good to be investigated *simply* but *comparatively*; and this unfolds cases of casuistry, such as the conduct of LUCIUS BRUTUS towards his own sons, and that of M. BRUTUS and CASSIUS, with others, where the question arises of a great good to ensue from a small injustice. Men must pursue things justly at present, and leave the future to GOD.

MORAL CULTURE.

Bk. VII. 3.

Having spoken of the *fruit*, it remains to discuss the *husbandry*; without which, the picture we have drawn is that of a statue, beautiful to contemplate, but lifeless. This subject amply receives the commendation of ARISTOTLE and

CICERO. Their observations must be supplemented with the aphorism of HIPPOCRATES, 'that men need medicine not only to assuage the disease, but to awaken the sense.'

The case truly belongs to 'sacred divinity' (theology), to which moral philosophy is however a handmaid; and, as the Psalmist says, 'that the eyes of the handmaid look perpetually towards the mistress' (Ps. cxxiii. 2), so the discretion of the maid discerns the will of the mistress. In this way moral philosophy, aiding the doctrines of religion, may of herself yield profitable instruction.

Scarcely handled in books.

Such being the excellence, it is strange that it has not been subjected to written inquiry, because it comprehends much involving both speech and action, and it is a matter in which the common talk of men (a rare thing) is wiser than books. Therefore it demands more particular investigation on account of its importance, and to vindicate the report of its deficiency as a study. Some points must be therefore exhibited, the better to explain it:

(i) What is in our power?
(ii) Men's different characters must be studied.
(iii) Also their age, sex, health, &c.
(iv) And their affections.

(i) *What is in our power?*

As practical men, we must inquire what is in our power, and what is not. The former we can alter, the latter we can only accommodate ourselves unto. The husbandman cannot control the seasons, nor the physician the constitution of the patient. So in the culture and cure of the mind, two things are beyond our command—*points of nature* and *points of fortune.*

Vincenda est omnis fortuna ferendo.—*Virg. Æn.* v. 710.

But the 'suffering' is not dull and spiritless, but wise and industrious, which derives profit out of what is adverse. This is that property which we call *accommodation* or *application.*

The wisdom of this '*application*' rests principally on the exact knowledge of the antecedent state or condition, for we cannot fit a garment unless we know the measure of the body.

(ii) *Men's different characters must be studied.*

Knowledge of the Characters of the Mind.

The first article of this knowledge of the *culture of the mind* is conversant about the *divers characters of men's natures or dispositions*, not their common proclivities to virtues and vices, or perturbations and passions, but those which are *intrinsic* (*internal*) and radical. This subject is strangely neglected by writers, moral and political, considering that it casts such bright reflection on both these branches of knowledge. Even Astrology, with some show of truth, distinguishes between the proclivity of the disposition and the influence of the planets. These varieties of dispositions deserve to be considered, some being proportioned to *magnanimity*, others to *pusillanimity*, others to *longanimity* (patience in pursuit of an object), which is commonly ascribed to God. Others again to benignity or malignity; and, as Aristotle observes, these distinctions manifest themselves in conversation.

Such a portraiture is given by the Italians of the conclaves of cardinals, where in the descriptions of their members we meet with the denominations of *sensitive*, *dry*, *formal*, *real*, *humorous*, *certain*, '*huomo di prima impressione*,' '*huomo di ultima impressione*,' and the like.

This kind of observation is lost in words, is not fixed in inquiry, and no precepts are formed from induction, though they are to be gathered from the goodly fields of history, poetry, and daily experience. We gather a few nosegays, but never extract from them recipes for use in life.

External influences upon character.

(iii) *Age, sex, health, &c., must be studied.*

And not only the *characters of dispositions*, but the *impressions of nature* stamped upon the mind by the acci-

dents of sex, age, health, region, beauty, as well as by the accidents of life—rank, wealth, state, prosperity, and their opposites must be studied.

PLAUTUS, for instance, observes, 'It is a wonder to see an old man beneficent.' ST. PAUL rebukes the Cretans with a censure taken from a heathen poet. SALLUST notes that kings mostly love contradictories. TACITUS, that a sudden rise of fortune rarely improves the disposition; PINDAR, that it rarely contributes to happiness; and the Psalms, that happiness will not be found in wealth. (Ps. xlii. 10.)

Such observations are glanced at by ARISTOTLE, and are handled in scattered discourses; but they have never been incorporated into Moral Philosophy, to which they as much appertain as the knowledge of soils to agriculture and of constitutions unto medicine; unless we imitate empirics, and minister the same remedies to all patients.

(iv) *Knowledge of the Affections and Passions.*

Knowledge of the Affections and Passions.

As in prescribing for the body we must first know the nature of the constitution, secondly the disease, and thirdly the cure; so in treating the diseases or infirmities of the mind we must ascertain the diverse characters of men's natures, then the diseases or infirmities of the mind, which are no other than the irregularities and distempers of the affections. Just as ancient politicians have compared the people to a sea, calm enough if the winds (*i.e.* orators and agitators) did not trouble it; so the mind would be peaceable enough if the affections, as winds, did not perturb it.

It is strange that ARISTOTLE should have omitted the discussion of the affections in his *Ethics*, their true place, and should have only incidentally mentioned them in his *Rhetoric*. The Stoics did better, yet spoiled the treatment by their subtle definitions (which in this case are mere matters of curiosity). There are, however, some elegant

treatises upon some of the affections, such as anger, consolation, tenderness of countenance, and others.

This knowledge is best handled by poets and historians delineating the origin, excitement, and operation of the affections, and especially their *conflict*, which is specially useful in moral and civil matters; just as we hunt beast with beast. Hence the *principle of rewards and punishments* which regulate society. We employ the affections of *hope* and *fear* to bridle the rest. As in the political state we bridle one faction with another, so it is in the little '*state of man*.'

Of the Remedies and Cures.

Points within our control.

We now come to *those points within our control*, and which are potent to affect the *Will* and *Appetite*, and to alter *manners*. In this part Philosophers ought to have diligently investigated Custom, Habit, Exercise, Education, Example, Imitation, Emulation, Company, Friends, Praise, Reproof, Exhortation, Fame, Laws, Books, Studies. By these, as governing Morality, the mind is influenced. Of these, as ingredients, receipts are compounded, which conduce to the preservation and recovery of the health of the mind, as far as human remedies can avail. Of these we select to briefly touch upon—

(a) Custom and Habit,
(b) Books and Studies.

(a) *Custom and Habit.*

The opinion of Aristotle is a loose one—that of those things which consist by Nature, nothing can be changed by Custom. He illustrates this by remarking that if a stone be thrown ten thousand times up, it will not learn to ascend; and that often seeing or hearing will not make us see or hear better. True as this is where nature is peremptory, it is otherwise wherein nature allows *intention* and *remission*. A strait glove will come on easier by use; a wand will, by use, alter the direction of its growth; the

voice becomes louder by exercise; heat and cold can be better endured by practice. These are better analogies for the purpose than his. Admitting that virtues and vices consist in habit, he should have shown the manner of superinducing the habit; for there are many wise precepts to regulate the exercises of the mind, whereof we will relate a few.

(i) The first is, '*that we beware even at first of higher or smaller tasks than the nature of the business requires, or our leisure or abilities permit.*'

If too great a task oppress a diffident nature, cheerfulness is blunted and hope is blasted. In a confident nature an opinion of facility engenders sloth. In both you create a false expectation. On the other hand, if the task be too easy, the performance of a greater work is prejudiced.

(ii) The second is, '*In practising any faculty to superinduce a habit, two seasons are to be observed, one when the mind is best disposed to business, the other when it is worst disposed.*' By the former, we may make progress; by the other, we may 'work out the knots and *stonds*' (*impediment, hindrance*) of the mind, and make the intervening times more pleasant.

(iii) A third precept ARISTOTLE unfolds by the way: '*Ever to make towards the contrary extreme of that to which we are inclined, so that it be without vice,*' like rowing against the stream, or bending a wand the opposite way to make it straight.

(iv) The fourth precept is grounded upon the axiom, '*that the mind is directed to anything with more happiness, if what we aim at be not the principal intention, but be overcome by doing something else, because the instinct of Nature revolts against necessity and compulsion.*

Many other rules might be given to direct *Custom*, which, wisely conducted, establishes another nature;

absurdly conducted, becomes but the ape of nature, imitating nothing to the life, but with a foolish deformity.

(b) *Books and Studies.*

If we speak of Books and Studies, and their influence upon manners, are there not diverse precepts, fruitful in caution and direction pertaining thereto? Did not one of the Fathers (probably AUGUSTINE), in great indignation call poetry *vinum dæmonum*, because it ministers temptations, lusts, and vain opinions? Is the opinion of ARISTOTLE not to be regarded, '*that young men are no fit auditors of Moral Philosophy, because the ardour of their affections is not yet settled, nor tempered by time and experience.*' Does it not hence come, that the excellent works and discourses of ancient writers (most powerful in persuading to Virtue by presenting her in stately majesty, and upholding to derision the popular opinions against her in their parasite garb)—do not these effect little towards honesty of life, because they are not read and pondered by men of mature years, but are confined almost to boys and beginners? Is it not true also *that young men are much less fit auditors of Matters of Policy than of Morality*, till they have been thoroughly seasoned in the principles of religion and duty; lest their judgments be corrupted and perverted to think that there are no true moral differences in things, and that all is to be valued according to utility and future? As the poet says:

Prosperum et felix scelus virtus vocatur.

And again:

Ille crucem pretium sceleris tulit, hic diadema.

The poets speak satirically and indignantly on behalf of virtue, but many books on policy suppose the same seriously; for MACHIAVELLI says, 'That if CÆSAR had been overthrown, he would have been more odious than ever

CATILINE was;' as if fortune made the only difference between a fury of lust and bloodshed and the most excellent spirit (saving his ambition) in the world.

Again, is not caution necessary with reference to some doctrines of morality, lest they render men too precise, arrogant, and incompatible? Many other axioms and cautions there are touching the effects which studies have upon morals. So likewise of the other points, company, fame, laws, &c. which we enumerated above.

A more accurate and elaborate *culture of the mind* is built on this ground, '*that the minds of all men are at some certain times in a more perfect state, and at other times in a state more depraved.*' The object is therefore to cherish the former and to obliterate the latter. The former is secured by two means—firm resolutions, and steady observances or exercises; the latter also by two means—expiation for what is past and turning over a new leaf. This, however, seems to pertain to religion, justly so, for all good moral Philosophy is but a handmaid to religion.

Concluding advice as to the ends of life to be chosen.

We conclude with the point most comprehensive and efficacious unto virtue—the choice of virtuous ends of his life, such as a man may fairly compass. If a man set before him *good ends*, and resolutely pursue them, he will attain to virtue at once. This is like the work of nature, which forms the rudiments of all the parts at once, not like that of the carver, who develops feature after feature, separately.

In obtaining virtue by habit, while a man practises temperance, for instance, he does not profit much in fortitude; but when he applies himself to good ends, his entire disposition is conformed to the pursuit of any virtue whatsoever—a state of mind which ARISTOTLE calls *divine*, not virtuous. But the speculations of heathen moralists were approximations to the divine ray, which through religion throws into men's souls the light and warmth of charity—called the bond of perfection, because it comprehends all virtues. If a man's soul be truly inflamed with charity, he

suddenly reaches a perfection all the doctrines of morality can never work for him. Further, as XENOPHON truly observes, all other affections raise the mind by some distortion of ecstasy or excess. Love exalts it, and at the same time settles and composes it. By aspiring to be like God in power, the angels fell. By aspiring to be like God in knowledge, man fell. By aspiring to resemble God in goodness and love neither man nor angels transgressed, or shall transgress. Unto this imitation we are called.

Conclusion.

Here we close this part of Moral Knowledge concerning the culture of the mind. The aim has been to collect into an Art of Science what others have omitted. For the effort we may plead the maxim 'that the pleasant liquor of wine is more vaporous, and the braver gate of ivory emits falser dreams.'

Congruity between the good of the mind and the good of the body.

Here we end the consideration of that general part of Human Philosophy which contemplates Man separately, as consisting of Body and Spirit. We must notice further a correspondence between the good of the mind and the good of the body. We divided the good of the body into health, beauty, strength, and pleasure: so the good of the mind—what tends to render it sound and composed, beautiful and comely, strong and active in the duties of life. Observation shows us that sometimes two of these meet in the same person, rarely three. As for pleasure, we have concluded that the mind ought not to be reduced to apathy, but to retain pleasure, and to be restricted rather in the subject of it than in the vigour of it.

§ 3.

HUMAN PHILOSOPHY (*continued*). Bk. VIII. 1.

CONGREGATE OR OF SOCIETIES.

- Civil Knowledge into
  - CONVERSATION
    - Not affected, much less despised.
    - MODERATED
      - GENERALLY, in
        - SPEECH, in the
          - *Conception.*
          - *Utterance.*
        - GESTURE of
          - *Speaker.*
          - *Hearer.*
      - RESPECTIVELY, to the
        - Quality of Men.
        - Nature of Matter.
        - Time and Place.
  - NEGOTIATION
    - Scattered occasions. Examples from the Proverbs of Solomon.
    - Advancement of FORTUNE. *Precepts.*
      - Summary in the
        - Knowledge of
          - OTHERS
            - *Six Ways.* By *Countenance, Works, Actions, Nature, Ends, Reports.*
            - *Three Ways.* *Acquaintance* with men of good repute. *A wise temper* in speech and silence. *Dexterity* in observation and act.
          - HIMSELF
            - How his nature and abilities sort with *State of the Times, Profession, Competitors, Friends, Examples, he would follow.*
        - Art of
          - Setting forth virtue and merits.
          - Concealing defects
            - Caution.
            - Colour.
            - Confidence
          - Moderation in both.
          - Flexibility of mind to occasions.
      - SPARSED.
        1. That he be well skilled what instruments to use, and how.
        2. That he overtask not his own abilities.
        3. Not to wait for, but provoke occasions.
        4. Not to undertake great or long works.
        5. To leave always a way open for retreat.
        6. Moderation in love and hate.
  - GOVERNMENT.

Civil Knowledge is hard to reduce to axioms. As CATO said of the Romans—they were like sheep, for a man could better drive a flock than one of them; so Moral Philosophy is more difficult than Political. It embraces the sphere of internal goodness, while civil knowledge regards the external goodness of society. So it comes to pass that there are evil times even with good governments, as we read in the history of Israel; the kings were sometimes good and the people bad. States also are like great engines, which move slowly and are not soon put out of order. As in Egypt, the seven years of plenty sustained the seven years of famine, so governments well founded resist the shock of supervening errors, which in the case of individuals overthrow the man. These respects somewhat qualify the extreme difficulty of civil knowledge.

Civil Knowledge has three parts, according to the three summary actions of society:

1. The *Doctrine of Conversation.*
2. The *Doctrine of Negotiation.*
3. The *Doctrine of Governments.*

Man seeks in society comfort against solitude, assistance in business, and protection against injuries. And there are three distinct wisdoms—wisdom in conversation, wisdom in business, and wisdom of state.

1. THE DOCTRINE OF CONVERSATION.

- Not affected, much less despised.
- But moderated, either
  - GENERALLY, *in*
    - SPEECH.
    - GESTURE.
  - RESPECTIVELY, *in*
    - Quality of Men.
    - Nature of *Matters*,
    - of *Time*, of *Place*.

The wisdom of conversation ought not to be affected or despised. An accomplishment in itself, it is a force in the

management of business, public or private. Of what special importance the countenance is, the poet insinuates in the line

Nec vultu destruo verba tua,

that a man may cancel the force of his words by his countenance. So may he his deeds, as CICERO says, recommending to his brother affability towards the provincials, telling him to admit them with an open countenance as well as with an open door. ATTICUS also seriously advised CICERO touching his *countenance* and *gesture* upon his first interview with CÆSAR. If the government of the countenance be so important, much more is that of the speech and other carriage belonging to conversation. The sum of behaviour is contained in the maxim to retain one's own dignity without intruding upon the liberty of others.

On the other hand, if behaviour degenerate into *affectation*, what is more unseemly than to act one's life? Even if it do not go to that extreme, yet it wastes time, and occupies the attention too much; just as young students are cautioned against boon companions as 'thieves of time,' so preoccupation with the study of behaviour is a thief of meditation.

Again, such as are exactly accomplished in urbanity, and are naturally formed for it, content themselves with this one habit, and seldom aspire to higher virtue. Those, on the other hand, who are conscious of a defect in this respect seek to cover it by *reputation*, which hides all deficiencies. Where that is not, it must be supplied by *punctilios* and *compliments*.

Again, there is no greater impediment to action than over nice attention to decency and ceremonial, and scrupulous observance of *time* and *season*. A man must make his opportunity as often as find it.

In conclusion, behaviour is the garment of the mind, and it must have the conditions of a garment—be made in

fashion, be not singular, set forth good proportions, conceal deformity, be not too strait nor restricted. This branch of civil knowledge has been well handled, and is not deficient.

2. The Doctrine of Negotiation.

Bk. VIII. 2.

(i) *Knowledge of Dispersed Occasions, with Examples.*
(ii) *Knowledge of the Advancement of Fortune, with Precepts.*

The Wisdom touching Negotiation or Business deficient.

The Wisdom touching Negotiation or business has not hitherto been collected into writing, to the great derogation of learning and its professors. This is the origin of the saying, *that there is no great concurrence between learning and wisdom.* For of the three wisdoms set down, learned men for the most part despise that of conversation as servile and a foe to meditation; acquit themselves fairly in that of government, but this happens to few. As for the wisdom of business, beyond a few trifling advertisements there is nothing written worthy of note, and learned men with small experience would excel in the treatment of it, others of long experience but without learning.

It can be reduced to precepts and is worthy of it.

There is no reason to fear lest the matter of this knowledge should be so various as not to be reduced to precepts. It is much narrower than the science of government, which is laboured at and subdued. Of this wisdom it appears some of the ancient Romans in their best and wisest times were professors. Coruncanius, Curius, Lælius, and others, used to walk at certain hours in the Forum and give advice to the citizens, who would resort to them, and consult with them upon the marriage of a daughter, the disposal of a son, the purchase of a bargain, or other occasional incidents of life. By this we learn that there is a wisdom of advice in private matters, begotten out of a general insight into the affairs of the world, and applicable to particular cases, and to be gathered by an induction from observing them.

The book which Cicero writes to his brother, '*De Peti-*

tione Consulatus,' (the only book of business written by the ancients that we know of) though directed to a particular action, is replete with wise and politic axioms of general application to popular elections. But we especially see in the aphorisms of King SOLOMON many profound and excellent cautions, precepts, and positions, covering a great variety of occasions. Upon these we will dwell awhile, offering to consideration a selection by way of example.

(i) *Knowledge of dispersed occasions, with examples from* King SOLOMON.[1]

I.

PARABLE.

'A soft answer turneth away wrath.'—Prov. xv. 1.

Explanation.

SOLOMON here gives in precept two points: one, that *an answer be made*; the other that *the answer be soft*. The first contains *three precepts*, (i) that you beware of *a sad and sullen silence*; (ii) that you beware of *delaying* or *putting off a business*, and that you *return a defence at once*; (iii) that by *all means an answer be made*.

It follows in the second place that *the answer* be *temperate*, not *harsh* and *peremptory*.

II.

PARABLE.

'A wise servant shall have command over a reproachful son, and shall divide the inheritance among the brethren.'—Prov. xvii. 2.

[1] This collection of thirty-four illustrations of the Proverbs of SOLOMON is taken from the *De Augmentis*, where the explanations are better worked out and more satisfactory. Those marked (o) are *not* in the *Advancement of Learning*, while the last two (XXXV. and XXXVI.) which have been added, are given in the *Advancement of Learning*, but are omitted in the *De Augmentis*.

Explanation.

In all divided families there arises some servant or gentle friend to compose differences, who wins the respect of all. If he be time-serving, he aggravates the discord, if faithful and upright, he deserves to be reckoned as a brother, and to receive at least the judiciary administration of the inheritance.

III.

PARABLE.

'If a wise man contest with a fool, whether he be in anger or in jest, there is no quiet.'—Prov. xxix. 9.

Explanation.

Avoid unequal intercourse. Neither contend with betters, nor with a worthless person. For in the latter case to overcome is no victory; to be overcome is a disgrace. The worst inconvenience is, when the person we contend with is a fool, *i.e.*, witless and wilful; has some heart, no brains.

IV.

PARABLE.

'Lend not an ear to all words that are spoken, lest perchance thou hear thy servant curse thee.'—Eccles. viii. 21.

Explanation.

Check *unprofitable curiosity*, and prudently refuse inquiry into what you do not want to know. It was judged very wise in POMPEY THE GREAT that he burned the papers of SERTORIUS unperused.

V.

PARABLE.(o)

'Thy poverty shall come as a traveller, and thy want as an armed man.'—Prov. vi. 11.

Explanation.

Debt and diminution of means overtake the prodigal imperceptibly, like a traveller with slow paces; want rushes upon him irresistibly. Wherefore we must prevent 'the traveller,' and stoutly provide against the 'armed man.'

VI.

Parable.

'He that instructs a scorner procures to himself a reproach; and he that reprehends a wicked man procures to himself a stain.'—Prov. ix. 7.

Explanation.

This parable, which agrees with our Saviour's precept, '*that we cast not pearls before swine*,' distinguishes the actions of instruction and *reprehension*: the actions of a scorner and of a wicked person. In the former case, labour is lost; in the latter, dishonour incurred. The instructor is subjected to ridicule, and the wicked one when reprehended repays his censurer with contumely and calumny.

VII.

Parable.

'A wise son is the gladness of his father, but a foolish son is the sadness of his mother.'—Prov. x. 1.

Explanation.

The father's joy is more because his son's virtue is more due to his good education. The mother's grief is greater because she is more soft and tender, and, maybe, has spoilt her son by too much indulgence.

VIII.

Parable. (o)

'The memory of the just is blest, but the name of the wicked shall putrefy.'—Prov. x. 7.

Explanation.

The fame of good men and bad after death is here distinguished. The good, whilst alive, have their name obscured by envy, when dead it daily gains in lustre. The fame of the wicked, artificially supported in life, sinks after death into infamy.

IX.

Parable.

'He that troubles his own house shall inherit the wind.'—Prov. xi. 29.

Explanation.

An admonition touching discord and domestic differences. They who seek remedy by disinheriting sons, or often changing their servants, find their *hopes turn to wind.* Such alterations mostly issue badly. Perturbers of their own households often meet with vexations and ingratitude, it may be, from those they have adopted and loved. Cicero says, 'omnem famam a domesticis emanare,' and Solomon rightly compares to an *inheritance of winds* the frustration of *expectation*, and the propagation of reports.

X.

Parable.

'Better is the end of a speech than the beginning thereof.'—Eccles. vii. 8.

Explanation.

This hits and remedies a common error. Men are more solicitous about the opening of their speech than their

conclusion. They should not only study epilogues and conclusions of speeches pertinent to the business, but they should endeavour aptly and pleasantly to throw in suitable speeches at the instant of leaving off, although they may have no reference to the business in hand.

XI.

Parable.(o)

'As dead flies cause the best ointment to send forth an ill odour, so does a little folly him that is in reputation for wisdom and honour.'—Eccles. x. 1.

Explanation.

A little folly in a very wise man, and a small offence in a very honest man, and a slight indecency of manners in a man of courtly and elegant behaviour, derogate much from fame and reputation.

XII.

Parable.(o)

'Scornful men ensnare a city, but wise men divert wrath.'—Prov. xxix. 8.

Explanation.

Solomon, in describing the character of the man that ruin a state, selects the *scorner*. There is no greater plague to a commonwealth than ministers who are by nature scorners. To gain the reputation of being statesmen, they undervalue dangers, taunt the prudent as timorous, scoff at delays, contemn fair fame as evanescent, treat the authority of the laws as cobwebs, reject counsels of precaution as melancholy apprehensions, ridicule men seriously wise, and weaken the whole fabric of civil government. The worst is, their action is performed by secret fraud, not by open force.

XIII.

PARABLE.(o)

'A prince that lends a willing ear to lies, his servants are all wicked.'—Prov. xxix. 12.

Explanation.

When a prince is of such a temper as to lend an easy and credulous ear without due examination to detractors and sycophants, there emanates a pestilential breath from him which corrupts and infects all his servants. Feigned reports, envy, defamation, slander, and such like are the devices of such vile surroundings of a prince. Even the more honest are seduced into evil ways, when moral honesty and innocence afford no protection. TACITUS says of CLAUDIUS, 'There is no safety with that prince into whose head all things are conveyed, as it were, by infusion and direction from others;' and PHILIP DE COMMINES says very truly, 'It is better to be servant to a prince whose jealousies have no end, than to a prince whose credulity has no mean.'

XIV.

PARABLE.

'A just man is merciful to the life of his beast, but the mercies of the wicked are cruel.'—Prov. xii. 10.

Explanation.

Pity and compassion implanted in man extend to the animal creation. Hence in the Mosaic law there are many precepts, not merely ceremonial, but beneficent. Even the Turks, a cruel and bloodthirsty nation, are merciful to the dumb beast. But lest SOLOMON'S dictum should seem to maintain all kinds of mercy, he adds 'that the mercies

of the wicked are cruel;' such as, sparing those who should be cut off by the sword. This kind of mercy, by a grant of impunity, arms and suborns the whole band of impious men against the innocent.

XV.

Parable.

'A fool utters all his mind, but a wise man reserves somewhat for hereafter.'—Prov. xxix. 11.

Explanation.

This parable especially corrects, not the futility of vain persons, nor the bold raving language of those without discretion, nor garrulity, but another vice—viz., the misgovernment of speech. When a man so manages his speech in private conference as to deliver whatever he conceives in any way pertinent to the purpose and matter in hand, as it were, in one breath—this prejudices business. *First*, a broken speech penetrates more deeply than a continued speech. *Secondly*, no man is so happy in delivery as at once to silence reply. *Thirdly*, if a man delivers himself gradually, he can watch the effect, and so frame what remains to be said with greater caution.

XVI.

Parable.

'If the displeasure of a great man rise up against thee, forsake not thy place; for pliant demeanour pacifies great offences.'—Eccles. x 4.

Explanation.

This precept hath two branches. *First*, that he relinquish not his place. *Secondly*, that he diligently attend to the cure, as in the case of some dangerous disease. Men who incur the

displeasure of their prince, partly from impatience of disgrace, partly from self-respect, partly from loyal feeling, are wont to resign their offices. SOLOMON deprecates this. *First*, this course effectually noises abroad the disgrace itself. *Secondly*, the wrath of the prince is fed, and becomes implacable. *Lastly*, this withdrawal bespeaks temper, which cherishes indignation to the evil of suspicion. The precepts for cure are these: *First*, above all things not to let it be imagined that this line of conduct due to the prince's displeasure arises from stupidity or stubbornness of mind. *Secondly*, let a man carefully avoid all, even the least, occasion whereby the cause of the indignation may be revived. *Thirdly*, let him seek with all diligence all occasions wherein his services may be acceptable to his prince. *Fourthly*, let him by a wise art of policy, either lay the fault upon others, or insinuate either the purity of his own intentions, or the malice of his accusers. *Lastly*, let him be very circumspect and intent upon the cure.

XVII.

PARABLE.

'The first in his own cause is just, then comes the other party and inquires into him.'—Prov. xviii. 17.

Explanation.

The impression made upon a judge by the first information of a cause takes deep root, and except there be some flaw of falsehood in it, it outweighs a just and simple defence. It is well, therefore, for the judge to know nothing of the case till he have both parties before him, and the best line for the defendant to take is to counteract prepossession by discovering some cunning shift or fraudulent dealing practised by the opposite party.

XVIII.

Parable.

'He that delicately brings up his servant from a child shall find him contumacious in the end.'—Prov. xxix. 21.

Explanation.

Princes and masters should keep a correct mean in the dispensation of their favour towards servants. And this is threefold: *First*, that servants be promoted by degrees, and not by reason of their faults. *Secondly*, that they be now and then accustomed to repulses. *Thirdly* (as Machiavelli advises), that they have ever before them a point to aspire to. Unless these courses be observed, princes reap disrespect and contumacy instead of gratitude. Sudden promotion engenders insolence. Rapid attainment of desires, impatience of repulse. If the accomplishment of wishes fail, apathy is the result.

XIX.

Parable.

'Seest thou a man of despatch in his business, he shall stand before kings: he shall not be ranked among mean men.'—Prov. xxii. 29.

Explanation.

Celerity and alacrity in the despatch of business are qualities eminently acceptable to princes. Profound men are liable to suspicion. Popular men are spited as interceptors of popular favour. Men of courage are regarded as dangerous. Honest men as too stiff and stoical. Only men of alacrity in business excite no critical faculty, and approve themselves by their promptitude.

XX.

Parable.

'I saw all the living which walk under the sun, with the succeeding young prince that shall rise up in his stead.'—Eccles. iv. 15.

Explanation.

This touches the vanity of men who flock about the designed successor of a prince, because in him the two principles of *hope* and *novelty* coincide; and these are at the root of the vanity. For men are more delighted with the contemplation of future hope than with the fruition of present advantage, and novelty is pleasing to man's nature. Hence men are prone to worship the rising sun, whilst those in possession smile at the fancy, and fight not with a dream, for 'hope is the dream of a man awake.'

XXI.

Parable.

'There was a little city and manned but by a few; and there was a mighty king that drew his army to it, and erected bulwarks against it, and entrenched it round. Now there was found within the walls a poor wise man, and he by his wisdom raised the siege, but none remembered that same poor man.'—Eccles. ix. 14, 15.

Explanation.

This parable describes the depraved nature of men, who in extremity fly for succour to the wisdom they despised, and then forget it when the danger is over. Machiavelli inquires which is more ungrateful—prince or people? But ingratitude proceeds not from them alone; but from the *nobility*, who envy and spite the author because not one of themselves.

XXII.

Parable.

'The way of the slothful is a hedge of thorns.'—Prov. xv. 19.

Explanation.

Here is vividly pourtrayed how laborious sloth proves in the end. When things are put off till the last moment without forecast everyone finds a briar or impediment which impedes or entangles.

XXIII.

Parable.

'He that respects persons in judgment doeth not well; for that man will forsake the truth even for a piece of bread.'—Prov. xxviii. 24.

Explanation.

In a judge facility of deportment is more pernicious than the corruption of bribes. Where *respect of persons* obtains there are numerous influences to warp the mind of a judge, and so for a slight matter—'a piece of bread'—judgment is perverted.

XXIV.

Parable.

'A poor man that by extortion oppresseth the poor, is like a land-flood that causes famine.'—Prov. xxviii. 3.

Explanation.

The ancients unfolded this idea under the fable of the two horseleeches, the full and the hungry. Oppression coming from the poor is far more heavy than the oppression caused by the rich, because it is such as seeks out all arts of exaction, and all corners for money.

XXV.

Parable.(o)

'A just man falling before the wicked is a troubled fountain and a corrupted spring.'—Prov. xxv. 26.

Explanation.

The precept involved here is that states must above all things beware of an unjust and infamous sentence in any cause of grave importance, especially where the guilty is not requited, and the innocent are condemned. Injustice to private persons pollutes the lesser streams, but such grave judgments poison the fount of justice, and public justice becomes public robbery.

XXVI.

Parable.

'Make no friendship with an angry man, nor walk thou with a furious man.'—Prov. xxii. 24.

Explanation.

The disposition and humours of friends, so far as it concerns our personal interest, should by all means be considered; but when they impose a necessity upon us, as to what quality of character we must put on and sustain, it is a very hard case and an unreasonable condition of friendship. Hence Solomon's precept that we commingle not our affairs with choleric natures.

XXVII.

Parable.

'He that conceals a fault seeks friendship; but he that repeats a matter, separates united friends.'—Prov. xvii. 9.

Explanation.

There are two ways of arbitrating differences: (i) an amnesty; (ii) a repetition of wrongs, interwoven with apologies and excuses. A great statesman once observed, 'To make a treaty of peace without recapitulating differences, deludes men with a specious agreement rather than settles difference by equity and moderation.' SOLOMON, however, approves amnesty and forbids recapitulation, because it may breed a new quarrel, and men would rather obliterate the memory of the wrong than apologise.

XXVIII.

PARABLE.

'In every good work there shall be abundance; but where works do abound there commonly is want.'—Prov. xiv. 23.

Explanation.

SOLOMON here separates the fruit of the labour of the tongue, and of the labour of the hands; as if *wealth* were the revenue of the one, *want* the revenue of the other. They that talk much labour little, and substitute vain glory and boast for proficiency of endeavour.

XXIX.

PARABLE.(o)

'Open reprehension is better than secret affection.'—Prov. xxvii. 5.

Explanation.

SOLOMON here reprehends timid friendship which refuses to admonish and reprove a fault. Such friendship is weak and worthless. A man may reap more profit from a manifest enemy than from such an effeminate friend. He may perchance learn from the reproach of a foe, what through too much indulgence is faintly whispered by a friend.

XXX.

PARABLE.(o)

'A wise man is wary of his ways; a cunning fool seeks evasions.'

Explanation.

There are two sorts of wisdom, the one real, the other fictitious. The latter, SOLOMON terms Folly. The votary of the former takes heed to his ways, foreseeing dangers and studying remedies, using the assistance of good men, fortifying himself against the invasions of the wicked, cautious in undertaking a business, not unprepared for retreat, attentive to advantage, courageous against encounter, with manifold other circumstances which govern his ways and actions. The votary of the latter, prone to fallacies and cunning devices, relies upon circumventing others. This specious wisdom is *wicked* and *foolish*. *First*, it belongs to a class of things not in our own power. *Secondly*, the man who maintains the character of a crafty companion deprives himself of the principal boon to practical life—*trust*, whilst experience shows that he is thwarted in his schemes, which, however fairly they promise, are mostly frustrated.

XXXI.

PARABLE.(o)

'Be not too precisely righteous, nor make thyself too excessively wise; why shouldst thou unseasonably sacrifice thy safety?'—Eccles. vii. 16.

Explanation.

There are times, says TACITUS, *wherein too great virtues are exposed to certain ruin.* As for that *nimium* set down in the parable, it must be understood not of *virtue* itself, but of its invidious affectation. A point somewhat resembling

this, TACITUS insinuates in a passage touching LEPIDUS, setting it down as a miracle that he had never been the author of any servile sentence, and yet had stood safe in such bloodthirsty times. 'This thought,' saith he, 'many times comes into my mind whether these things are governed by fate; or whether it lies also in our own power to steer an even course, void of danger and indignity, between servile flattery and sullen contumacy.'

XXXII.

PARABLE.

'Give occasion to a wise man, and his wisdom will be increased.'—Prov. ix. 9.

Explanation.

Here we have a distinction between the wisdom which is grown and ripened into true habit, and that which only floats in the brain or is vaunted in speech, but has taken no root. The one is ready for the opportunity of exercise, and is expanded; the other becomes confused, and its possessor even doubts whether his preconceptions have not been mere dreams.

XXXIII.

PARABLE.

'He that praiseth his friend aloud rising early, it shall be to him no better than a curse.'—Prov. xxvii. 14.

Explanation.

Moderate praise uttered seasonably conduces much to men's fame and fortune. When immoderate and unseasonable, they profit nothing, nay, rather work prejudice. *Firstly*, they manifestly proceed from too much *affection* or too studied *affectation*. *Next*, moderation in praise is an invitation to

others to add to it, whilst exuberant praise prompts the hearers to detract something. *Thirdly*, too much magnifying a man stirs up envy towards him, for all immoderate praises seem to be a reproach to others who merit no less.

XXXIV.

Parable.

'As faces shine in waters, so men's hearts are manifest to the wise.'—Prov. xxvii. 19.

Explanation.

This parable distinguishes between the hearts of wise men and of other men, comparing those to waters or mirrors which reflect the forms and images of things, these to earth or rude stone which reflect nothing. The mind of a wise man is aptly compared to a mirror, because in it he sees his own image along with those of others, and he endeavours to be no less varied in application than in observation.

XXXV.

Parable.

'Whoso robbeth his father or his mother, and saith it is no transgression, the same is the companion of a destroyer.'—Prov. xxviii. 24.

Explanation.

Here it is to be noted that when men, presuming upon friendship, wrong their friends, they aggravate the fault and add injury to impiety.

XXXVI.

Parable.

'The words of a talebearer are as wounds, and they go down into the innermost parts of the belly.'—Prov. xviii. 8.

Explanation.

Flattery and insinuation manifestly artificial make slight impression, but that which has the appearance of natural simplicity sinks deep.

These illustrations, few out of many, may of course be applied to a more sacred purpose, and might have been applied more extensively, if worked out closely and explained by examples.

This wisdom best drawn from History

The wise men of old, as well as the Hebrews, were wont to reduce their practical observations to parable, aphorism, or fable. Fables indeed supply the place of examples. But the best of all writing to deduce this from is *History*. Knowledge derived fresh from particulars best governs particulars, and it is far better for practical life to make the discourse wait upon the example, than the example to wait upon the discourse. For in the former case, being set down with all the circumstances, it governs the discourse and supplies a pattern for action. In the latter, it is cited mechanically, and serves only to approve the discourse.

and Biography.

If the history of Times furnishes the best ground for discourse upon government, the history of Lives is the most proper for discourse of business, and better than both is a discourse upon letters wise and weighty, like those of CICERO to ATTICUS. So far of the matter and form of this part of Civil Knowledge touching Negotiation, which must be noted as deficient.

(ii) *Knowledge of the Advancement of Fortune, with Precepts.*

There is a subordinate consideration, which differs from what we have said as much as *sapere* does from *sibi sapere*; the one tending towards the circumference, as it were, the other towards the centre. There is a wisdom of counsel and a wisdom of pressing onward one's own fortune. They sometimes coincide, often diverge. Many wise in their own

ways are weak for government or counsel, like ants which work wisely for themselves, but injure a garden. This conceit, if too much gloried in, has been deemed impolitic or unlucky, as instanced in TIMOTHEUS the Athenian, who having done much good to the state, claimed the credit solely to himself. So it came to pass he never prospered afterwards. This confidence in self is unhallowed. Therefore those that were great politicians ever ascribed their successes to their felicity, not to their skill or virtue. So SYLLA surnamed himself *Felix*, not *Magnus*, and CÆSAR said to the master of the ship, 'Thou carriest CÆSAR and his fortune.'

Nevertheless, such maxims as *Faber quisque fortunæ suæ: sapiens dominabitur astris; invia virtuti nulla est via*, and the like, being used as spurs to industry, rather for resolution than presumption, are sound and good. Great minds are so impressed with a consciousness of their action that they scarcely can contain it within themselves. AUGUSTUS CÆSAR (who rather differed in disposition than in virtue from his uncle) desired his friends about his death-bed to give him a *plaudite*, as if he had played his part well on the world's stage.

This branch of knowledge must be reported as defective, but to show that it is comprehensible by axioms, a few rules are appended.

How to advance one's fortune.

At first sight it may appear to be something novel to teach men how to make and advance their fortune, a doctrine to which all will become disciples until they realise the difficulty, for fortune like virtue is a stern master. The discussion, however, concerns learning greatly, both in honour and substance. In *honour*, because superficial (officious) men must not go away with the idea that learning is like the lark which mounts on high and sings and does nothing else, but like the hawk which can soar aloft, and strike its prey below as well. In *substance*, because it is the perfect law of the inquiry after truth that there be not any-

thing in being and action which may not be drawn and collected into contemplation and doctrine. But learning regards this building of fortune as an inferior work. For no man's fortune can be an end worthy of his being, and not rarely the most worthy abandon their fortune willingly for higher interests. Nevertheless, as an instrument of virtue and merit, a man's fortune deserves consideration.

Precepts belonging to this knowledge.

The precepts belonging to this knowledge are

(i) SUMMARY or PRINCIPAL,

(ii) SPARSED or SUBORDINATE.

PRECEPTS SUMMARY are conversant about the true knowledge of others and of oneself.

The first precept on which principally the knowledge of others turns is to procure the *window* of MOMUS. He, when he saw the angles and recesses of man's heart, found fault that there was not a window through which a man might look into those obscure windings.

This window we shall obtain if with all diligent circumspection we procure good information touching particular persons with whom we have to deal, their dispositions, their desires, their ends, their habits, their strong and weak points, their faults and virtues, friends and foes and personal peculiarities, and above all their principles. This information must not only relate to particular persons but to particular actions, for men change with actions.

Such informations touching particulars, whether of person or action, are the minor propositions of every *active syllogism.*

Knowledge of men obtained by six ways.

Knowledge of men may be disclosed in six ways. By their *faces, words, deeds, nature, ends,* and *reports of others.*

1. *The Face.*

Let not the ancient adage move us, *Fronti nulla fides,* for though this is generally true, there are certain subtle

motions of the eyes, face, looks, and gesture whereby is unlocked *janua quædam animi*—the gate of the mind.

2. *Words.*

Men's words are full of flattery and uncertainty, yet these counterfeits are in two ways excellently detected, namely, when words are uttered on the sudden, or else in passion. Experience shows that few men are so settled in resolve as not to betray, under some circumstances, their real mind. Above all, it probes the mind to the bottom when simulation is put to it by a counter-simulation, according to the Spanish proverb, 'Tell a lie and find the truth.'

3. *Deeds.*

Neither are deeds altogether to be trusted without a diligent and judicious consideration of their magnitude and nature. For the saying is most true that 'fraud erects for itself a stronghold of credit in smaller matters, that it may cheat with better advantage afterwards.' The Italian thinks he is about to be bought and sold when he is better used than usual without manifest cause, for small favours lull to sleep both caution and industry.

4–5. *Natures and Ends.*

The surest key to unlock the minds of men consists in searching and disclosing either their *natures* and *dispositions*, or their *ends* and *intentions*. The weakest and simplest of men are best interpreted by their *natures*, the wiser and more reserved are understood by their *objects*. It was wisely and pleasantly (though perhaps untruly) said by a Nuncio of the Pope, returning from a certain nation to which he had been sent as *lidger* (legate), in answer to an inquiry about his successor, 'that in any case his Holiness would not send one too wise, because,' said he, 'no wise man would ever imagine what they in that country were

likely to do.' It is a common error with wise men to measure other men by themselves, and so they overshoot the mark, as the Italian proverb says, 'There is commonly less money, less wisdom, and less good faith than men suppose.' So we must judge men of shallow capacity rather by the proclivity of their dispositions than by the aim of their intentions.

Princes are best interpreted by their natures, private persons by the ends they have in view. Princes have, for the most part, no particular desires to compass, by the light and remote realisation of which men can judge of their actions. This is one chief reason why Scripture says 'their hearts are inscrutable.' Private persons are like travellers making for some point, so that a man knowing the aim, may fairly conjecture what they would do or would not do.

Nor is the information touching the diversity of men's natures and ends to be taken *simply* but *comparatively*, as for instance, with reference to the dominant influence of some particular affection or humour.

6. *Reports of others.*

As for getting at the knowledge of men's minds second hand from reports of others, we may briefly notice: weaknesses and faults are best learned from enemies; virtues and abilities from friends; customs and times from servants, thoughts and opinions from confidants. Popular fame is light, and the judgment of superiors unreliable, for, before such, men are masked.

The most compendious way however rests on three things: *First*, to make a general acquaintance with men of large worldly experience in human nature and affairs. *Secondly*, to keep a discreet temper, and to preserve moderation both in liberty of speech and taciturnity. More frequently using the liberty of speech, which begets the same and brings much to our knowledge, and studying silence,

The most compendious way of getting this knowledge.

where it is important, for it induces confidence, so that men love to deposit their secrets with us as in a closet. *Thirdly*, we must acquire the habit of keen observation and presence of mind, so that in every conference and action we may promote the main issue and have an eye to incidental circumstances. Above all caution must be taken that we retain self-possession, by repressing a too active forwardness of disposition.

Self-Knowledge.

Self-examination necessary.

After the knowledge of others comes the knowledge of ourselves. For the maxim *Nosce teipsum* is not only a rule of universal prudence, but especially holds good in worldly wisdom. As St. James says, 'He that views his face in a glass straightway forgets what manner of man he was,' so there is need of a very frequent introspection. So in civil affairs. There are many mirrors. The Divine glass is the word of God. The politic glass is the state of the world, and of the times in which we live. Wherefore we ought to take an impartial survey of our virtues, defects, failings, and impediments, so estimating that we reckon the good points least, the bad ones most.

From this survey the following points come under consideration.

(a) The first consideration is, how a man's individual constitution and moral temper agree with the general state of the times. If they be found in accord, he may give himself more scope and liberty. If there be any antipathy or difference, then in the whole course of his life he should maintain conduct more close and reserved.

(b) The second consideration should be how a man's nature sorts with the professions and courses of life which are in esteem, and whereof he is to make choice, that if uncertain what course of life to adopt, he may select that most in accordance with his natural bent. But if involved

in an unsuitable calling, let him leave it at the earliest opportunity and take to another.

(c) The third consideration should be how a man may be valued, and may comport himself when pitted against rivals and competitors, and take that course of life wherein there is the greatest dearth of able men, and in which he is most likely to shine.

(d) The fourth consideration is that in the choice of friends, a man should consult his own nature and disposition, and proceed by the lines of his own temper. For different constitutions require different kinds of friends.

(e) The fifth consideration is that a man take heed to guide himself by examples—that he do not too foolishly affect the imitation of others, as if what is pervious to others is patent to himself, never considering what difference may exist between the nature and carriage of himself and his exemplar.

You must take care to put yourself forward judiciously.

Next to self-discernment is self-exhibition, and here we notice nothing more usual than for a more able man to make less show. There is a great advantage in wisely displaying virtues, gestures, and merits, and also in artificially concealing weakness, defects, and disgraces. Ostentation, though the first degree of vanity, is a vice in manners rather than in policy. It will certainly impress the more ignorant, though the more wise smile at it. Therefore the ostentation won with many countervails the disdain of the few. If this ostentation be carried out with decency and discretion, for example, if it exhibit native candour and inbred ingenuity, or be assumed as by military men in presence of danger, or with freedom and grace as if not habitual, it adds to a man's reputation. And not a few natures more solid than windy (*that want ventosity*) suffer for their moderation, not without prejudice to their reputation and merit.

Severe moralists may disallow this mode of enhancing

virtue, but it cannot be denied that virtue through carelessness should not suffer in value.

Virtue disparaged in three ways.

This may happen in three ways:

Firstly, by obtruding services which men deem to be rewarded when accepted.

Secondly, by overdoing a thing which induces satiety.

Thirdly, by reaping the fruit of one's virtue too soon in commendation, applause, honour, favour, and becoming too much delighted therewith. On this point there is an aviso.

'Beware lest you seem unacquainted with great matters, that are thus pleased with small as if they were great.'

Conceal defects with adroitness.

But the concealment of defects is of no less importance than the dexterous display of advantages. This may be done in three ways; by *caution*, by *colour*, and by *confidence*.

By *caution* is meant when we discreetly avoid being put upon those things for which we are not suited.

By *colour* is meant when men contrive that a favourable construction is put upon their faults and defects. If we perceive a defect in ourselves, we must endeavour to conceal it by borrowing the virtue nearest in resemblance. Thus he that is dull must pretend gravity; a coward, mildness, and so on; making a virtue of necessity, so that what was not in our power may seem not to have been in our will.

As for *confidence*, it is an impudent but effectual remedy to profess contempt for what one cannot attain to. But there is another kind of confidence, more impudent than this; viz. to *face out a man's own defects*—to boast them and to obtrude them upon opinion. But, above all, in this helping a man's self in his carriage, nothing avails more than that a man do not expose himself to scorn and injury by too much goodness and easiness of disposition,

but in all things show some sparks of a free and generous spirit that carries with it a sting as well as honey.

This guarded deportment, combined with an independent spirit, is imposed upon some by the accident of person or fortune; and these, if they have any good parts, commonly succeed well.

The declaring of a man's self differs widely from ostentation or revealing one's self, of which we have spoken; for it refers not to men's abilities or weaknesses, but to the particular actions of life, in which point nothing is more polite than to observe a wise and discreet mediocrity in disclosing or secreting inward intentions touching particular actions. Although depth of secrecy and working in the dark may prosper, it often comes to pass that dissimulation begets errors and ensnares the dissembler himself. So the ablest men have openly avowed their aims without dissimulation.

Versatility and adaptability to circumstances.

Touching the moulding of the mind, it must be made obedient to opportunities, not stiff and resisting. Nothing mars the making of men's fortunes so much as this: 'that they continue to be what they were, and follow their own bent when occasions are turned.' Thus LIVY states of CATO MAJOR, the most expert architect of his own fortune, that he had a *versatile* disposition; and MACHIAVELLI remarks of FABIUS CUNCTATOR that 'he would have been temporising still, according to his old habit, when the nature of the war had altered, and required hot pursuit.' In some men this weakness proceeds from want of penetration in their judgment. They discern the favourable opportunity too late. This oversight DEMOSTHENES reprehends in the Athenians, saying, they were like countryfellows in a fencing-school, who only throw their guard after they have received a blow. Others are loth to lose their labour, and think that their perseverance, after all, will be rewarded, and that another occasion will turn up. From whatever cause this stereotyped mind proceeds, it

is a thing most prejudicial to a man's affairs and fortunes. Nothing is more politic than to make the wheel of our mind concentric with the wheel of our fortune.

Thus much of the Summary Precepts touching the Architecture of Fortune.

(ii) PRECEPTS SCATTERED:

are many, but a few are selected.

1. The first precept is that this 'architect of his own fortune' should rightly use his rule; that is, that he should train his mind to rightly judge of the proportion and value of things, as conducing more or less to his own fortune and ends, and that he should intend the same substantially and not superficially. It is strange, but most true, that the *logical* part of the mind in some men is good, whilst the mathematical part is worthless; *i.e.* they can soundly judge the consequences, but very unskilfully estimate the value of things. For the true direction of the mathematical square of the mind, it is worth while especially to know what ought first and then successively to be resolved upon for the building and advancing a man's fortune.

(a) In the first place, *the amendment of the Mind.* For by taking away the impediments to mental improvement a way is sooner opened for Fortune than when these impediments are removed by its assistance.

(b) *Wealth and Means*, which most men place first, but, as MACHIAVELLI says, 'Money is not the sinew of war;' on the contrary, there are no other sinews but the sinews of valiant men's arms. So in like manner the sinews of Fortune are not moneys, but the *abilities* of the mind, *wit*, *courage*, *resolution*, *moderation industry*, and the like.

(c) *Fame and Reputation*, which, because they have certain tides and times, if not taken in their due season, are seldom recovered, it being a very hard matter to play an after-game of reputation.

(d) Lastly, *Honours*, to which certainly there is a more easy access by any of the other three; better by all united than if you begin with honours and proceed to the rest.

But as it is of special importance to observe the order and priority of things, so it is of no less import to observe the order and priority of times, the misplacing of which is one of the commonest errors, men doing at the beginning what they should do at the end, and *vice versâ*.

2. The second precept is, *that with this confidence of mind we do not grapple with things too arduous, nor that we row against the stream.*

3. The third precept, which *appears* somewhat repugnant to the preceding, though it is not really so, is *that we do not always wait for occasions*, but *sometimes provoke them, and lead the way to them.* For as it is a received principle that a general should lead an army, so wise and understanding men should command matters, and do things they see fit to be done, and not pursue and build upon events. For there are two different kinds of ability in managing affairs—*an ability of contrivance* and *an ability of execution.* The union of both is required, for either without the other is imperfect.

4. A fourth precept is, *not to embrace matters which take up too much time.* The reason why men of laborious professions, as lawyers, divines, authors, and others, are not politic in advancing their fortunes is this, that they want time devoted to other purposes, to inform themselves of particulars, to wait upon opportunity, and to contrive what may conduce to their advantage.

5. A fifth precept is, *to imitate nature, which does nothing in vain*, which a man may surely do, if he wisely interweave his business, and so subordinate the parts of his action as to make each serve some good purpose present or prospective. Nothing is so impolitic as to mind actions one by one. Numberless occasions are thereby lost, and many opportunities occur more propitious for something wanted hereafter than for what occupies the present moment.

6. A sixth precept is, *that we engage not ourselves too peremptorily in anything which, though not at first sight, is liable to accident; but that we ever have either an open window to fly out at or a secret postern way for retreat.*

7. A seventh precept is, the ancient precept of BIAS (one of the seven sages of Greece), so that it be used honestly with caution and moderation. *So love a man as yet thou mayest become an enemy; so hate a man as yet thou mayest become his friend.*

Conclusion of the rules for making one's fortune.

It must be remembered that this rapid sketch of these branches of knowledge, noted as deficient, is not a complete treatise; nor must it be forgotten, as all know, that fortunes come tumbling into men's laps without all this ado, and that many make good fortunes by diligence in a plain way, by little intermeddling, and keeping themselves clear of gross errors.

But as CICERO, when he delineates the perfect orator, does not mean that every pleader should be such, and they who pourtray a prince trace the lines of perfection, so in describing a politic man we mean one politic for his own fortune.

All these rules are for the pursuit of good not evil ends.

Further, it must be borne in mind that these precepts belong to what are called *bonæ artes*. Men may make their fortunes more speedily by having recourse to *evil arts*, adopting such principles as those of MACHIAVELLI, 'to covet the appearance not the reality of virtue, for the

credit of it is a help, the use of it an encumbrance;' or his position 'that fear is the best instrument wherewith to work upon men;' or, as CICERO says, '*Cadant amici dummodo inimici intercidant*,' like the Triumvirs, who sold the lives of their friends for the deaths of their enemies; or imitate CATILINE, who said, 'I, if fire seize upon my fortune, will quench it, not with water, but with ruin;' or be guided by the maxim of LYSANDER, 'that children are to be deceived with comfits, and men with oaths.' Such corrupt doctrines, as in all things else, outnumber the good, and in life, as in roads, the shortest way is commonly the foulest, though the fairer way is not so long about.

Men should not only seek their fortunes, but remember higher things also.

But men, if masters of themselves, and not carried away by a tempest of ambition, ought in the pursuit of their fortune to not only spread before them that general map of the world—'*that all things are vanity and vexation of spirit*,' but many more particular charts, '*that being without well-being is a curse, and the greater the being the greater the curse*;' '*that all virtue is most rewarded, and all wickedness is most rewarded, in itself*.' Secondly, they ought to look up to the Eternal Providence and Divine Judgment, which often subverts evil plots and imaginations, as Scripture says, 'He hath conceived mischief and shall bring forth a vain thing' (Job xv. 35). And, though they refrain from evil ways, yet this incessant and Sabbathless pursuit of one's fortune leaves not the tribute we owe to God, a tenth of our substance and a seventh of our time. It is to small purpose we walk with an erect face towards heaven, and a grovelling spirit towards earth, eating dust like the serpent. If any man flatter himself he will employ his fortune well, though he may acquire it ill, he must be reminded of what was said of AUGUSTUS CÆSAR, and afterwards of SEPTIMIUS SEVERUS, '*that either they should never have been born, or else they should never have died*.' They did so much mischief in the pursuit of their greatness, and so much good when they were established. Such compen-

sations are good for practice, not for purpose. Lastly, it is well in this rapid race towards fortune, for men to cool themselves with the instruction of CHARLES V. to his son, '*That fortune hath somewhat the nature of a woman. If she be too much wooed, she flies farther off.*' This is a remedy for those whose tastes are corrupted. Let men build upon the corner stone of divinity and philosophy—*Primum quærite.* For Divinity commands, '*First seek the kingdom of God, and all these things shall be superadded unto you.*' And philosophy commands something like this, '*Seek first the goods of the mind, and the rest shall be supplied, or no way prejudiced by their absence.*' Although the foundation laid by man is sometimes placed on the sands, the same foundation laid by the hand of heaven is firmly settled upon a rock.

3. THE DOCTRINE OF GOVERNMENT.

Bk. VIII. 3. Difficulty owing to the secret nature and operation of government.

Concerning government, it is a part of knowledge secret and withdrawn from inquiry in the two respects in which things are secret. Some things are secret because hard to know, others are secret because not fit to be uttered. All governments are obscure and invisible. The government of God over the world is hidden, inasmuch as it contains so much perplexity. The government of the soul over the body is hidden and difficult to trace. Nevertheless, to the general rules of policy and government appertain reverent and reserved handling.

In the conduct of governors towards the governed, all things, as far as the frailty of man permits, ought to be manifest and revealed. Dark as this globe is, it is as crystal to the eye of God. So to princes and wise administrations, the dispositions of their peoples, their conditions and needs, their factions, animosities, and discontents, ought to be made clear and transparent. But in presence of a king who is a master of the science, the certificate aspired to by the writer is that of the ancient philosopher who, being silent when others displayed their wisdom, desired for his own

part that it might be certified of him, 'that there was one who knew how to hold his peace.'

With respect to the public part of government—*laws*—it is good to note one deficiency. All those who have written of laws have written either as philosophers or lawyers, not as statesmen.

The province of the lawgiver and law expounder.

Philosophers make imaginary laws for imaginary commonwealths. Their discourses are like the stars. They are so lofty that they give little light. Lawyers write according to the states of which they are inhabitants, what is received law, not what ought to be law. The wisdom of the lawmaker differs from that of the law-expounder. Just as streams passing through different soils are coloured, so laws emanating from the same fountains receive a particular hue from the accident of their sphere. The wisdom of a lawmaker consists not only in a platform of justice, but in the application thereof—the means of rendering it certain—of remedying uncertainty, of rendering laws easy of execution, and of removing impediments; the relations between laws affecting the person and the state; how they should be made apt and agreeable; how they should be delivered, in *texts* or *acts*, with or without preambles; how to prune and reform them from time to time; how to collect and codify them. The exposition of general and special cases; the mode of administration; the relation between law and equity, whether best to be kept separate or fused; the practice, profession, and teaching of the law, and many other points.

Conclusion of the Review of Philosophy.

This is the close of this portion of learning touching Civil Knowledge, and with it, of human philosophy and philosophy in general.

When Bacon reviewed the condition of his time in which learning had made her third visitation, in all the qualities thereof, as, for instance, the excellence and vivacity of the wits of this age—the noble assistance received from ancient authors—the art of printing—the triumphs of navigation, which disclosed multitudes of experiments and a

mass of natural history—the leisure afforded for investigation—the happy conjuncture of peaceful times—the exhaustion of religious controversy, which had diverted men's minds from scientific pursuits—the perfection of royal learning, he could not but feel persuaded that this third era of learning would far surpass the brilliant epochs of Greek and Roman literature if men would only know their own strength and weakness—reciprocate the light of invention, not of contradiction—esteem the investigation of truth as an enterprise, not as an ornament, and employ their wit and magnificence to lofty purposes. As for his own labours, let men criticise and censure, only let them observe and weigh them well according to the old adage: '*Strike, but hear.*'

CHAPTER. V.

THEOLOGY.

Refers to Man's Reason and Will.

Discussed as to—

1. The Nature and Manner of the Revelation.
   - (a) *Its Limits.*
   - (b) *Its Sufficiency.*
   - (c) *Its Acquisition.*

2. The Thing Revealed.
   - (α) Matter of Belief.
     - (i) *Faith.*
     - (ii) *Manners.*
   - (β) Matter of Service.
     - (iii) *Liturgy.*
     - (iv) *Government.*

Introductory.

The Prerogative of God comprehends the whole man, and extends to his reason as well as to his will. We are to obey His law though repugnant to our will, and His word, though repugnant to our reason. If we believe only what is agreeable to our sense, we consent to the matter, not to the author. *Faith* was accounted to Abraham for righteousness, whilst the *reason* of Sarah led her to derision. Bk. IX. 1.

If well considered, it is more worthy to believe than to know, as we now know. Here below, our knowledge is subject to sense; as our faith is to spirit, a more worthy

agent. Hereafter the condition will be reversed, faith will then cease, and 'we shall know as we are known.'

Hence we conclude that SACRED THEOLOGY (or as we call it, DIVINITY) is based upon the word of God, not upon the light of nature. This holds good not only of the mysteries of the *Christian creed*, but of those which concern the *moral law* truly interpreted, such as, '*Love your enemies*.' A great part of the moral law is of that perfection that the light of nature cannot aspire unto it. Whence then the conceptions of virtue and vice, right and wrong, good and evil, which man is said to have by the light of nature? Because this expression, 'the light of natur ,' is used in two different senses. One, to signify *ratiocination*, the other, an *instinct* according to the law of conscience, which is a sparkle of the purity of his first estate. So then the doctrines of religion, moral and mystical, are not to be attained except by inspiration and revelation from God.

Reason to be used in spiritual things.

The use of reason in spiritual things, and its sphere is very wide. ST. PAUL terms religion '*our reasonable service of God*,' because the ceremonies and types of the old law were full of reason and significance. Thus the Christian faith preserves a golden mean between the law of the heathen and the law of MAHOMET, which have embraced two extremes. The former had no constant belief, but left all to liberty of argument. The latter interdicted argument altogether. The one presented the face of error, the other of imposture; whereas the true faith admits and rejects disputation within due bounds.

The Use of Reason twofold. (i.) In apprehending Mysteries. (ii.) In deducing doctrines and their consequences.

The use of Reason in religion is of two sorts: (i) in apprehending mysteries; (ii) in deducing doctrines and directions. The *former* by illustration, for God condescends, in mercy to our capacity, to make His mysteries sensible to us, and accommodates His doctrines to our reason by applying His inspiration to open our understanding, as the wards of a lock by the application of a key. The *latter* consists of proof and argument, secondary and relative, not

original and absolute. When the articles and principles of religion are placed beyond examination, it is then permitted to us to make deductions and inferences according to analogy. This is not the usual method in nature which establishes principles by induction without a middle term, but it holds good in other branches of knowledge as well as in religion, wherein there are *placita* as well as *posita*. We see it exemplified in chess and draughts. The first laws of the game are *placita*; then our play, based upon these, is artificial and rational. So in human laws there are many maxims, which are *placita juris*, positive upon authority, not upon reason, and therefore indisputable. But what is most just, not absolutely, but relatively to those maxims, affords wide scope for controversy. Such is the *secondary reason* which has place in religion, and is grounded upon the *placita* of God.

Its limits not yet defined.

Here this deficiency must be noted. Investigation has not yet settled the true limits and the right use of reason in spiritual things. The usual mode seems to be—under the pretext of a right conception of what is revealed to search into what is *not* revealed. Some falling into the error of NICODEMUS, who wanted to have things more sensible than God chose to make them. Others, into the error of the disciples, who were scandalised at the appearance of a paradox: 'What is this that He saith, A little while ye shall not see me; and again, a little while and ye shall see see me?' &c. (St. John xvi. 17.)

This is the more insisted upon on account of the blessed consequences likely to flow from it. If well defined, it would check the curiosity of speculation and bridle the fury of controversy. It cannot but open men's eyes to see that many controversies belong to things either *not revealed* or *not positive*. Many arise from weak inferences, which, if men would follow the example of the great Apostle of the Gentiles, they would modestly dismiss with, '*Ego, non Dominus*,' and preface their opinions with

'*secundum consilium meum.*' Whereas they now reverse the dicta, and thunder forth their curses and anathemas to the terror of those who have not sufficiently learned from SOLOMON, '*that the causeless curse shall not come.*' (Prov. xxvi. 2.)

SACRED THEOLOGY (or DIVINITY) has two principal parts:

(i) The *Nature of the Revelation.*
(ii) The *Matter revealed.*

(i) THE NATURE OF THE REVELATION consists of three branches:

(a) The Limits of the Information.
(b) The Sufficiency of the Information.
(c) The Acquisition of the Information.

(a) *The Limits of the Information.*

To these belong three considerations: how far particular persons continue to be inspired; how far the church is consequently inspired; and how far reason may be used. The last may be noted as deficient.

(b) *The Sufficiency of the Information.*

To this belong two considerations: what points of religion are fundamental, and what are capable of being advanced towards perfection? and how the gradations of light, according to the dispensation, are material to the sufficiency of belief?

Here advice may be given, that points fundamental and points of development ought to be with piety and wisdom distinguished. This would abate the heat of controversies, as former considerations would abate the number of them.

Of fundamental points, the Saviour gives the law thus: 'He that is not with us is against us.' Of points not

fundamental, thus: 'He that is not against us is with us.' The coat of our Saviour was one piece, so is the doctrine of the Scriptures; but the garment of the Church was of divers colours, and yet not divided. So it is a thing of great use clearly to define what and of what latitude those points are which do make men aliens, and disincorporate them from the Church of God.

(c) *The Acquisition of this Information*

rests upon the true interpretation of the Scriptures, which are the waters of life.

The interpretations of Scripture are of two sorts:

(i) *Methodical*, and

(ii) *Solute*, at large, or unrestrained.

(i) METHODICAL.

This divine water is drawn forth much like natural water out of wells or fountains. Either it is first pumped into a cistern, thence drawn for use, or else it is directly taken from the source. The former, though more handy, is more liable to pollution. It is the *scholastic method*, whereby theology has been reduced to an art, and the streams of doctrine thence derived.

In this men have sought for three things—a *summary brevity*, a *compacted strength*, and a *complete perfection*. The first two they fail to find, the third they ought not to seek.

(a) *Brevity*.

Brevity is the parent of expansion. Abridgment results in obscurity. Obscurity requires exposition. Thence follow commentaries more voluminous than the original writings. So the tomes of the Schoolmen are more ponderous than the writings of the Fathers, whence the Master of Sentences (PETER LOMBARD, born at the beginning of the twelfth century, Bishop of Paris 1159, died 1164), made

his sum or collection). And the volumes of the modern doctors of the civil law exceed those of the ancient jurisconsults, of which TRIBONIAN compiled the Digest. (TRIBONIAN was Quæstor, Consul, and Master of the Offices to JUSTINIAN. With sixteen others he compiled the Digest promulgated in A.D. 533.)

(b) *Strength.*

It is true that sciences reduced to exact methods have the appearance of strength, but this is more pleasing in appearance than substantial in fact. They resemble buildings which, standing by the framing of their architecture, are more subject to ruin than when strengthened in every part. As in nature, the further you go from particulars, the greater liability to error, so much more in Divinity, the more you recede from Scripture, the weaker your positions become.

(c) *Completeness.*

As for perfection in Divinity, it is not to be sought for. The pursuit of it makes this course of artificial theology more suspected. Many things are incomprehensible, and cannot be made to square with system.

(ii) SOLUTE (or unrestrained interpretations).

Exposition must be sober because God knows things hidden from us.

Some of these interpretations of Scripture have been more curious than sober. Nevertheless, Scripture being inspired, differs from all other books in the authorship, and hence the differences in the exposition of it. The Divine Author knew *four things* man cannot know—*the mysteries of the kingdom of glory, the perfection of the laws of nature, the secrets of the heart of man,* and *the future succession of all ages.*

From the first two have been drawn certain senses of Scripture, which must be hedged by sobriety; the one analogical, the other philosophical. As to the former, man is not to anticipate his time. 'Now we see through a

glass darkly, but then face to face.' Nevertheless, we may polish the glass, and guess at the enigma. To go too far is to overthrow the spirit of man. The body receives aliment, medicine, and poison. Aliment nature can alter and overcome. Medicine partly alters nature, and is partly altered by it. Poison works wholly upon nature. So in the mind, whatever knowledge reason cannot work upon and convert is a mere intoxication, and endangers a dissolution of the mind and understanding.

Natural philosophy and Scripture.

The latter mode of interpretation has been extremely in vogue since the time of PARACELSUS and others, who have pretended to find the truth of all natural philosophy in Scripture. There is no such enmity between God's word and His works. Neither do such interpreters give honour to the Scriptures, but the reverse. To seek heaven and earth in the Word of God (whereof it is said, 'Heaven and earth shall pass away, but my word shall not pass away') is to seek the temporary amongst the eternal. To seek divinity in philosophy is to seek the living amongst the dead, and to seek for philosophy in theology is to seek the dead amongst the living. Neither are the pots and lavers of the outer court of the Temple to be sought for in the Holy of Holies. Again, the purpose of the Spirit of God is not to express matters of nature in the Scriptures, but to apply them for illustration adapted to man's capacity. To conclude. These two interpretations, enigmatical and philosophical, which have been received and pursued in imitation of the rabbins and cabalists (expounders of the Jewish Cabala, or hidden science of divine mysteries, said by the rabbins to have been delivered to MOSES with the law) are to be restricted by the the Apostle's maxim, 'Be not high minded, but fear.' (Rom. xi. 20.)

The two latter points known to God, not to man, touching the secrets of the heart and the succession of times, make a just distinction between the interpretation

of Scripture and other books. It has been well observed that the answers of Christ upon occasion were not pertinent to the state of the question asked, because, knowing man's thoughts, He never answered their words, but their thoughts. So with the Scriptures, which, being written for the thoughts of men for all time, are not to be interpreted according to the proper sense of the word, or relatively to the occasion of their utterance, or according to their duty to the context; but have inherently, collectively, and distributively endless springs and streams of doctrine to water the Church in every part. The literal sense is the main stream, the moral and sometimes the allegorical sense are they of which the Church has most use. Not that men should be bold in allegories, or light in allusions; but the method of interpretation suitable to profane books is to be reprehended.

Expositions of Scripture.

There is no deficiency in abundant exposition of Scripture. But to books of theology, whether harmonies, controversies, treatises, commentaries, sermons, and lectures, one thing is wanted—*positive theology*, collected upon particular texts of Scripture, in brief observations, not dilated into common places, nor made food for controversies, nor reduced into method, nor abounding in sermons. If such had been condensed from the material at hand during the last forty years (of BACON's time), we should have had the best work on Divinity since the day of the Apostles.

(ii) THE MATTER OF DIVINE REVELATION

The *Matter of Divine Revelation* is twofold:

(i) *Matter of Belief*, and

(ii) *Matter of Service* or *Adoration.*

The latter is directed by the former, and is the external body of religion, as the former is the soul. The heathen religion was not only a worship of idols, but an idol in itself, for it had no soul, *i.e.* no certainty of belief or confession.

Now, out of these two, four main branches of divinity spring: *faith*, *manners*, *liturgy*, and *government*.

(a) *Faith.*

Faith contains the doctrine of the nature of God, of the attributes of God, and of the works of God. The nature of God consists of three persons in the unity of the Godhead. The attributes of God are either common to the Deity or respectively belong to the Persons. The works of God are comprehended by creation and redemption. Both these, as in total they belong to the Unity of the Godhead, so in their parts they refer to the Three Persons. That of *Creation*, in the mass of matter, to the Father; in the disposition of the form, to the Son; in the continuance and conservation of the being, to the Holy Spirit. So the work of Redemption, in the election and counsel, to the Father; in the consummation, to the Son; and in the application, to the Holy Spirit; for by the Holy Spirit was Christ conceived in the flesh, and by the Holy Spirit are the elect regenerate in spirit. This work likewise we consider effectually in the elect, privatively in the reprobate, and according to appearance in the visible Church.

(b) *Manners.*

Of these the doctrine is contained in the law, which discloses sin. The law itself is threefold—*the law of nature*, *the moral law*, and the *positive law*. The written law divides itself into prohibitions and commandments. Sin, in the *matter* and *subject*, is divided according to the commandments; *in the form* it relates to the three persons of the Trinity. Sins of infirmity against the Father, whose more special attribute is power; sins of ignorance against the Son, whose attribute is wisdom; and sins of malice against the Holy Ghost, whose attribute is love. *In operation* it leads either to blind devotion or to profane and libertine transgression. Imposing restraint where God grants liberty, or taking liberty where God imposes

restraint. *In degree* it divides itself into *thought*, *word*, and *deed*. Here the application of the law of God to cases of conscience is much to be commended. That which quickens both these doctrines of *Faith* and *Manners* is the elevation of the heart, whereunto belong books of holy meditation, exhortation, Christian resolution, and the like.

(c) *Liturgy.*

Service consists of reciprocal acts between God and man. On the part of God, preaching of the word, and the sacraments, the seals of the covenant. On the part of man, invocation of the name of God. Under the law, there were sacrifices, which were *visible prayers*; but now, *worship being in spirit and truth*, there remains only '*vituli labiorum*' (the calves of our lips). Holy vows of thanksgiving and consecration may also be deemed *sealed petitions*.

(d) *Government.*

The government of the Church consists of the patrimony of the Church, the franchises of the Church, the offices and jurisdiction of the Church, and the law of the Church governing the whole. All of which have two considerations, particular to themselves and general to society.

This matter of Divinity takes the form of instruction in truth or confutation of error. Declensions from religion, besides *Atheism*, are three: *Heresies*, *Idolatry*, and *Witchcraft*. *Heresies*, when we serve the true God with a false worship. *Idolatry*, when we worship false gods, supposing them to be true. *Witchcraft*, when we adore false gods, knowing them to be wicked and false. *Witchcraft* is the height of idolatry, and SAMUEL teaches us that these three are all of a nature, for he says, 'Rebellion is as witchcraft, and stubbornness as the sin of idolatry.' (1 Sam. xv. 23.)

This department of theology has been abundantly worked. No space lies vacant, and men have indeed been diligently occupied either in sowing the good seed or in sowing tares.

Conclusion.

BACON has thus noted on his intellectual map those parts which have not hitherto engaged attention, or been adequately cultivated. If he has in any way varied from common opinion, his object has been improvement, not change. Fidelity to his argument compels him to advance beyond others, but he is equally ready to be surpassed by others. This is manifest from the fact that he has enunciated his views without any attempt to warp the judgment of his readers by first refuting his opponents. Should any objection at first sight occur to what has been well said, a reperusal may remove it. Where anything has been erroneously advanced, prejudice has at all events not been created by controversy. This sometimes only strengthens what is hollow and shakes what is solid. To argue about falsehood is an honour to it and a slight to truth. What is seldom wrong, BACON claims as his own; what is good he offers *tanquam adeps sacrificii* first to the Divine Majesty and next to His Majesty King JAMES I.

EXAMINATION QUESTIONS.

(THESE QUESTIONS ARE FRAMED ON THE TEXT-BOOK.)

BOOK I.

1. What five Discredits has knowledge incurred from the zeal and jealousy of Divines?

2. How are we to understand the censure of Solomon concerning the multiplicity and study of books; and the admonition of St. Paul 'that we be not seduced by *vain* philosophy?'

3. What are the *three limitations of knowledge?*

4. What does Bacon mean by '*Lumen siccum*' and '*Lumen madidum*'?

5. How is the argument that learning leads to Atheism answered?

6 'The contemplation of God's creatures and works produceth no perfect knowledge but wonder, which is *broken* knowledge.' Explain this.

7. What is the corrective specially to be applied?

8. Explain the words *contristation, continent, content, ventosity, coarctation.*

9. Enumerate the disgraces learning receives from '*politiques.*' Explain '*politiques.*'

10. Explain the illustrations supplied by CATO, CARNEADES, VIRGIL, and ANYTUS.

11. Illustrate the statement that glory in arms and brilliance in literature are coeval in a state.

12. How is the allegation met that learning is rather an impediment than an assistance to policy and government?

13. What answer is made to the accusation of *pedantry?*

14. By what illustrations does BACON show that the government of princes under tutelage has excelled that of maturer years?

15. Who were MISITHEUS, PIUS QUINTUS and SEXTUS QUINTUS?

16. How is the charge met that 'learning indisposes men to political life'?

17. Bacon twice quotes the fable of IXION—where? How does he explain it?

18. What reply does he offer to the charge that 'learning disposes men to seclusion and sloth'?

19. With reference to the charge that learning takes up too much time, quote the answer of DEMOSTHENES to ÆSCHINES.

20. Explain the words *extenuate, seducement, maniable.*

21. What answer is made to the charge that learning undermines reverence for law and government?

22. What was CATO's '*blasphemy against learning*'? how was he punished for it?

23. Show historically 'that the Romans never ascended to that height of empire till the time they had ascended to the height of other arts.'

24. Who were the Thirty Tyrants?

25. What is the meaning of *redargution?*

26. What is the third Discredit to learning, itself threefold?

27. How is MACHIAVELLI quoted with reference to the poverty of learned men?

28. What is said about of *meanness of employment?*

29. Explain '*abeunt studia in mores.*'

30. To what are the *ill manners* of some learned men to be attributed?

31. What about indifference to *self*, for which some learned men are remarkable? How are DEMOSTHENES and SENECA quoted in support of BACON's remarks?

32. What is the next fault attributed to learned men?

33. From what two causes does it proceed?

34. 'The custom of the Levant, that subjects do forbear to gaze or fix their eyes upon princes, is in outward ceremony barbarous, but the moral good.' Explain this.

35. With respect to blemishes in behaviour of some learned men, give in illustration of BACON's reply the anecdotes about THEMISTOCLES and PLATO.

36. Explain *morigeration.* How far does BACON defend it?

37. What are the three Distempers of Learning?

38. Give BACON's rapid sketch of the influence of the Schoolmen and the Reformation upon eloquence and learning.

39. Who were CAR of Cambridge, ASCHAM, and ERASMUS?

40. 'It seems to me that PYGMALION's frenzy is a good emblem of this vanity'—*what* vanity? Explain this.

41. What does Bacon say of the use and abuse of eloquence?

42. How does Bacon quote St. Paul and illustrate by the Schoolmen with reference to contentious learning?

43. What are the different effects of 'mind working upon matter,' and 'mind working upon itself'?

44. Explain the meaning of *vermiculate.*

45. Briefly state the *two kinds* of unprofitable curiosity.

46. How is the fable of Scylla applied?

47. What is the meaning of *digladiation?*

48. What were the faults of the Schoolmen?

49. What is the third Vice, or Distemper, of learning?

50. Into what two sorts does it divide itself?

51. What two kinds of credulity are there according to subject matter?

52. Illustrate from ecclesiastical history.

53. Show that natural history is similarly affected.

54. What two kinds of credulity are there according to arts and opinions?

55. What sciences are more intimately allied with the imagination than with reason?

56. By what fable of Æsop does Bacon illustrate his position that Alchemy, though futile, has done some good?

57. To what is the progress of practical science and the debasement of philosophy due?

58. The position *oportet discentem credere* must be coupled with this, *oportet edoctum judicare.* Explain.

59. Enumerate the '*peccant humours*' incident to learned men.

60. Explain the meaning of *humour* as here used.

61. Who was Gilbertus?

62. To what does Bacon compare the conjunction of Jupiter and Saturn?

63. What is the true object of both contemplative and practical philosophy?

64. Enumerate the sacred considerations by which Bacon proves the Dignity of Knowledge.

65. What is the Celestial Hierarchy quoted by Bacon from Dionysius the Senator?

66. How does Bacon support his position from Scripture?

67. How does he unfold the special object of the Mosaic economy?

68. How does he reply to the argument that the Apostles were unlearned men?

69. To what purpose does he quote Julian the Apostate and Gregory I.?

70. How does he strengthen his argument by reference to the Reformation and the Jesuits?

71. What *human testimonies* does he adduce to prove the Dignity of Learning?

72. How does he interpret the fable of ORPHEUS' Theatre?

73. What argument does he derive from *learned princes?*

74. 'Then should people and estates be happy when either kings were philosophers or philosophers kings.' Whose remark is this?

75. Give a brief sketch of BACON'S remarks upon the successive Roman emperors from DOMITIAN to COMMODUS.

76. What story is told of GREGORY THE GREAT?

77. What anecdote is told of HADRIAN?

78. Explain '*policing of cities.*'

79. To whom was the epithet '*Cymini Sector*' applied?

80. Explain the word *Pasquil.*

81. What anecdote is given about MARCUS AURELIUS ANTONINUS?

82. What character does BACON give of QUEEN ELIZABETH?

83. Give the chief points taken from the history of ALEXANDER THE GREAT to illustrate the position that 'learning hath an influence and operation upon martial powers as well as civil government.'

84. What were the literary works of JULIUS CÆSAR?

85. What three speeches of CÆSAR does BACON quote, not so remarkable for eloquence as admirable for vigour and efficacy?

86. Quote the anecdote about CÆSAR and SYLLA.

87. What does BACON say of XENOPHON?

88. 'The expedition and retreat of the 10,000 encouraged the invasion of Persia by the Greeks, as was afterwards purposed by JASON the Thessalian, AGESILAUS the Spartan, and achieved by ALEXANDER the Macedonian.' Give a brief account of these.

89. What effect has Learning upon moral and private virtue?

90. What after this is the next advantage?

91. How is it shown that it conduces to the fortune of individuals, as well as of states?

92. How does BACON contrast the pleasure of Learning with other pleasures?

93. What does LUCRETIUS the poet observe on this?

94. What is BACON'S concluding argument on the advantages of learning?

95. In speaking of the yearning for immortality BACON says, 'We see some of the philosophers which were least divine, and denied generally the immortality of the soul.' To whom does he refer?

96. Give the stories of MIDAS and AGRIPPINA.

97. Explain the meaning of *magistral, illustration.*

98. Explain the peculiar use of the words *adoptive, allowance, appliance, blasphemy, censure, climate.*

99. Explain the peculiar meaning of the words *comen, complexion, copie, corroborate, delicacy, exulceration, gravelled.*

100. Explain the peculiar senses of the following words: *illustrate, embarred, leese, magistral, peccant, pensileness, pusillanimity, reluctation, summary, temperature, traduce, watch-candle.*

BOOK II.

1. In his Dedication to the King what reason does BACON assign for continuing his discourse upon the Advancement of Learning?

2. By what three means are all works overcome? Which is the principal of these?

3. What was the tendency of patronage to learning in his day?

4. What are the three principal objects about which meritorious efforts for learning are conversant?

5. What four particulars concern seats of learning?

6. What two affect books?

7. What two regard the persons of learned men?

8. What is the peculiar meaning of '*summary*'?

9. What criticisms does BACON pass upon the Colleges and Universities of Europe?

10. What four defects does he point out?

11. What remark does he make about the studies of LOGIC and RHETORIC as then pursued?

12. How does he show that original thought was affected by memory?

13. What suggestion does he make with respect to the intercourse between the Universities; and about the appointment of special professors to pursue inquiry in special branches of science?

14. What is the meaning of *opera basilica*?

15. Explain the meaning of *redargution, prosecution, unmanured.*

16. What replies does BACON expect to his survey of the state of science, and the defects he points out?

17. Into what three faculties does BACON divide the understanding? What are the three main subjects connected with them?

18. How is HISTORY divided?

19. Which part is defective?

20. How does he illustrate his aim by the '*Statua of Polyphemus*'?

21. What are the three kinds of NATURAL HISTORY?

22. Which two are defective?

23. What is BACON's criticism upon the Natural Histories then extant?

24. What is the meaning of MIRABILARIES?

25. To whom does he appeal as a precedent for his suggestions?

26. In what light does he regard prodigies and miracles of Religion?

27. 'Which humour of vain and superstitious arrogancy is derided in Plato'—what is the anecdote about HIPPIAS and SOCRATES?

28. How does BACON apply the story of the philosopher that fell into the water while gazing at the stars? Who was the philosopher?

29. What is the peculiar meaning of *mystery* as used by him?

30. What kind of HISTORY is most important for NATURAL PHILOSOPHY? Why?

31. How is CIVIL HISTORY divided?

32. What are the three kinds of *perfect History?*

33. What does BACON say about the HISTORY OF TIMES (Chronicles). The Histories of what two states does he adduce?

34. What are his suggestions for a complete course of Ancient History?

35. What brief survey does he make of BRITISH HISTORY?

36. What does BACON say about BIOGRAPHIES? What poetical fiction does he quote about Time and Lethe?

37. What purpose do NARRATIVES of particular actions serve

38. What anticipations does BACON form with respect to the advance of science from the progress of navigation and discoveries made in his time?

39. Who are the two Navigators referred to?

40. Explain the words *mought, imbase.*

41. What is the province of ANNALS and JOURNALS—another division of HISTORY?

42. How does BACON illustrate their value from the book of Esther?

43. 'A kind of *ruminated History*—books of policy'—to what does BACON refer?

44. What is meant by the HISTORY OF COSMOGRAPHY?

45. How is ECCLESIASTICAL HISTORY divided, and the province of each part?

46. What is the use of the HISTORY OF PROPHECY?

47. What is comprehended by the HISTORY OF PROVIDENCE, and what is its value?

48. Enumerate the APPENDICES TO HISTORY. What is meant by *apophthegms*? What ancient work on *Apophthegms* does he refer to?

49. 'That part of learning which answereth to one of the cells.' Explain this. Which of the 'cells' does he refer to?

50. How does BACON explain POESY, or how does he briefly define it.

51. To what does he attribute the satisfaction it brings to the mind?

52. Contrast *true History* and *feigned History*.

53. What are the divisions of POESY?

54. What is the meaning of *allusive?*

55. 'The brief sentences of the seven'—who were the seven wise men of Greece?

56. What is *representative* POETRY, and its use?

57. What does BACON say of *Parables?*

58. What is one special use of *parabolical poetry?*

59. How does BACON allegorise the fables of the war of the Titans against the gods—BRIAREUS—ACHILLES, and CHARON?

60. What does BACON remark upon the allegorical interpretations of HOMER?

61. What judgment does he pass upon the completeness of this branch of knowledge?

62. What are the 'two originals of knowledge,' and its divisions accordingly?

63. What does BACON mean by *philosophia prima?* How does he briefly explain his meaning?

64. How does BACON criticise what currently was understood by this science?

65. What is meant by 'certain participles in nature?' Give instances.

66. What illustrations by axioms does BACON give of the meaning he assigns to this *original philosophy?*

67. How does he report of its condition?

68. How is DIVINE PHILOSOPHY or NATURAL THEOLOGY defined? What are its limits?

69. What is said of the province of miracles?

70. How do the Heathen conceptions as to God and Nature differ from those of Scripture?

71. What use does BACON make of the fable of 'the golden chain'?

72. What '*extreme prejudice*' affects the mixture of religion and philosophy?

73. What Appendix to THEOLOGY does BACON name? How does he understand the text 'Let no man deceive you in sublime discourse touching the worship of Angels, pressing into what he knoweth not'?

74. How far does he deem an inquiry into the nature of Angels and Spirits lawful and unlawful?

75. What are the two parts of NATURAL PHILOSOPHY?

76. What does BACON mean by NATURAL MAGIC?

77. In what sense does BACON use the term METAPHYSIC?

78. What provinces does BACON assign to PHYSIC and METAPHYSIC?

79. According to BACON's use of the term PHYSIC, what place does it occupy with reference to NATURAL HISTORY and METAPHYSIC.

80. What three 'doctrines' does PHYSIC embrace?

81. What is the province of METAPHYSIC?

82. What is the meaning of FORM as used by BACON?

83. What is the 'duty and virtue of all knowledge'?

84. What is the relative order of PHYSICS, METAPHYSICS, and NATURAL PHILOSOPHY? Explain—'knowledges are as pyramids.'

85. Explain the meaning of *dilatation, concatenation.*

86. By what considerations is the study of METAPHYSICS commended?

87. How is Sapience or wisdom defined?

88. What are the two parts of METAPHYSICS?

89. By what illustrations does BACON instance the confusion between METAPHYSICS and PHYSICS?

90. What is the consequence of this confusion?

91. How does BACON contrast the philosophy of PLATO, ARISTOTLE, and others, with that of DEMOCRITUS?

92. 'An inquiry into final causes does not derogate from the Providence of God.' Illustrate this by examples drawn from political life.

93. Why does BACON regard MATHEMATICS as a branch of METAPHYSICS?

94. How are MATHEMATICS divided? Define each part.

95. What benefit arises from the study of MATHEMATICS?

96. What is meant by NATURAL PRUDENCE? Into what three branches is it divided?

97. How does BACON allegorise the Fable of IXION?

98. What is to be understood by NATURAL MAGIC and TRUE NATURAL MAGIC?

99. Explain *arefaction, ambages.*

100. In reporting that NATURAL MAGIC is deficient, what suggestions does BACON offer with respect to the subject matter?

101. What suggestions with respect to the nature of the inquiry?

102. To what does BACON attribute the rise of different schools of philosophy?

103. Define or explain *theory.* Show the meaning of it by reference to the two systems of Astronomy.

104. What suggestions does BACON offer with respect to making a collection of the ancient philosophies into a body?

105. What does he mean by stating that the three beams of man's knowledge are *radius directus, radius refractus, radius reflexus?*

106. What criticism does BACON pass upon the received classification of the sciences?

107. Explain the meaning of *phenomena* and *empirical?*

108. How is HUMANITY divided? What is meant by the term?

109. What are the two branches of 'the knowledge which concerns the sympathy of mind and body?

110. What two Arts belong to the former?

111. What ancient Philosophies treated of them?

112. Explain *prenotion, factures.*

113. What Defect of the first part is noted?

114. What two considerations belong to the second branch, and how hitherto treated?

115. What three sects does BACON quote to exemplify strict rules of diet? Who were the MANICHEES?

116. What purpose does he assign to the ordinances of the Mosaic law respecting *fasting and abstinence?*

117. How far important is the reciprocal influence of mind and body in medical treatment?

118. How is the knowledge that concerns *Man's Body* divided?

119. 'The Poets do well to conjoin Music and Medicine in Apollo. Why?

120. Why do MEDICINE and POLITICS differ from other Arts with respect to the want of confidence they meet with?

121. What in former days was the consequence of this?

122. What advice does BACON give to remedy it?

123. How does he quote Our Saviour in honour of the Medical Art?

124. What are the three objects of MEDICINE?

125. Briefly state the deficiencies enumerated.

126. Explain what BACON means by COSMETIC and ATHLETIC.

127. What remarks does he make with respect to 'Arts Sensual'?

128. What are the two parts of Human knowledge which concern the MIND?

129. What are the two Appendices to this part?

130. How does BACON classify DIVINATION? Briefly explain the divisions?

131. What is the meaning of *prenotion, inflexion?*

132. What is meant by FASCINATION?

133. What does BACON remark upon religious ceremonies designed to work upon the imagination?

134. How is 'the knowledge which respecteth the faculties of the mind of man' divided? What are the provinces and objects of these?

135. 'This JANUS of imagination hath two faces.' Explain.

136. What does ARISTOTLE say about the dominion of mind over body, and reason over imagination?

137. Why in matters of Faith and Persuasion are the positions of imagination and reason reversed?

138. By what illustration does BACON support his assertion that 'rational knowledges,' though 'the keys of other Arts,' are the least delightful to men?

139. The 'Arts intellectual are four in number'—what are they?

140. What is the meaning of *spinosity*?

141. What three reasons does BACON give for deficiency in the Art of Invention or Discovery?

142. Who were the sons of ISSAY?

143. Explain the meaning of AXIOM, SYLLOGISM, PROPOSITION, MIDDLE TERM, DEFINITION.

144. Why did some Philosophers deny the certainty of knowledge?

145. Who were the ACADEMICS?

146. What is the meaning of *acatalepsia*, *copie*, *cavillations*?

147. Under what two branches does BACON propose to discuss invention?

148. Why is the 'invention' of speech or argument not a proper discovery?

149. What is 'the great sophism of all sophisms'?

150. What is the meaning of 'predicament'?

151. What is 'the more important and profound kind of fallacies in the mind of man' which Bacon notes?

152. Explain the meaning of the word IDOL.

153. What four kinds of IDOLS does he give? Clearly explain each of them.

154. What part of the Art of Judgment does BACON consider neglected?

155. What are the four kinds of Demonstration?

156. How is Custody—the art of retaining knowledge—divided?

157. Upon what two things does the Art of Memory depend? Explain each.

158. What is the meaning of 'commerce of barbarous people'?

159. What does BACON say about Chinese characters and hieroglyphics?

160. What is the purpose of the Science of Grammar?

161. What kinds of ciphers were in use in Bacon's days?

162. To what branch of science does METHOD properly belong?

163. What is the most real diversity of METHOD?

164. Enumerate the different '*diversities of Method*' given by BACON.

165. What is the province of Method?

166. Who was RAMUS?

167. What does BACON mean by metaphorically applying the terms *profundity*, *longitude*, and *latitude* to knowledge?

168. How does BACON criticise the method of imposture which he attributes to RAYMOND LULLIUS? Who was he?

169. Explain *typocosmy*, *fripper*.

170. Define RHETORIC. Whose works and efforts does BACON commend?

171. By what three things is the process of reason disturbed?

172. To what infirmities is the reasoning faculty liable?

173. What are the ends of Logic and Morality (moral philosophy)?

174. How does BACON criticise PLATO's estimate of Rhetoric? How does he apply his dictum 'that virtue, if she could be seen, would move great love and affection'?

175. How do eloquence and persuasion affect the relation between Reason and Imagination?

176. How does LOGIC differ from RHETORIC? What is the relation according to ARISTOTLE of LOGIC, RHETORIC, and MORAL PHILOSOPHY?

177. In noting deficiencies, BACON speaks of a collection made by ARISTOTLE of 'Colours of good and evil'; what is meant? Give an example.

178. What two helps does BACON suggest for readiness in speaking?

179. Define and explain what is meant by *Antitheta* and *Formulæ*.

180. What two appendices does BACON add to the subject of *Tradition*?

181. Enumerate the five considerations they embrace?

182. What five precepts does he give for the sound instruction of youth?

183. By what anecdote does he illustrate the benefit of education to one possessed of mean faculties?

184. With respect to 'the doctrine which concerns the appetite and will of man,' what opinion does he express as to the previous labours of others?

185. How does he account for the omission he notices?

186. In what two ways is the 'nature of good' to be considered?

187. What effect has Christianity had upon the inquiry into the Supreme Good?

188. Give a brief review of the way in which this subject was handled before BACON's time.

189. What great omission does Bacon proceed to supply?

190. Illustrate what he means when he says 'there is formed in everything a double nature of good'?

191. How does this consideration of the double nature of good decide most of the controversies with which Moral Philosophy was conversant? First, between ARISTOTLE and his opponents. Secondly, between ZENO and SOCRATES on one side, the Cyrenaics and Epicureans on the other?

192. State some other ancient philosophies and their modern counterparts which it censures.

193. What is the division of 'private or particular good'?

194. Explain 'Active good,' 'Passive good'; what are the subdivisions of Passive good? Explain them.

195. 'The good of contentment is placed either in the reality of the enjoyment or greatness and vigour of it.' What is the story of SOCRATES and the Sophist controverting which was the greater good?

196. What is the second question upon which this depends?

197. How does BACON define *Duty* and classify it?

198. By what considerations does he show that the branch of *private duty* does not fall under Civil and political Science?

199. What are its subdivisions?

200. What work of King JAMES does BACON single out for high commendation?

201. 'We are much beholden to MACHIAVELLI and others that wrote what men do and not what they ought to do.' Why?

202. What principal subjects belong to the consideration of this part of Duty?

203. How does BACON decide the question, 'a great deal of good at the expense of a small injustice'?

204. What is the relation between Theology and Moral Philosophy, with respect to culture of the mind?

205. Mention the chief articles of inquiry external to ourselves, which belong to this part of the subject.

206. How does BACON use the terms— *magnanimity*, *longanimity*, and *pusillanimity*, in connection?

207. By what political comparison does BACON illustrate the influence of the affections over the mind?

208. What does he say of ARISTOTLE's arrangement in treating of the affections?

209. What matters within our own control influence the mind, affect the will and appetite, and alter manners?

210. What four precepts does BACON give with respect to custom and habit?

211. What caution and advice does he give about books and studies?

212. What kind of mental culture more accurate and elaborate than the rest does BACON advocate?

213. What is the last and most compendious mode of reducing the mind unto virtue and good estate?

214. What are the concluding remarks about charity and love?

215. How does he compare the good of the body and the good of the mind?

216. Why is CIVIL KNOWLEDGE most difficult? What is meant by it?

217. What are the three parts of *Civil Knowledge?*

218. What remarks does BACON make about the *Wisdom of Conversation?* How does he illustrate by the anecdote of CICERO, CÆSAR, and ATTICUS?

219. Speaking of the *wisdom of negotiation*, or business, BACON says, 'Of this wisdom it seemeth some of the ancient Romans in the saddest and wisest times were professors.' Explain.

220. Illustrate by some of the Parables or Sayings of King SOLOMON, with his explanations (in a worldly point of view) 'a few profound and excellent cautions and precepts for general use.'

221. What does BACON say of the value of *Parable* and *History*, and the reason why the former was more in vogue in ancient, the latter in modern times?

222. There is another division of this part, 'a wisdom of counsel and a wisdom of pressing a man's own fortune—they sometimes meet, and often sever.' Explain how.

223. How does BACON discuss such a sentiment as *Faber quisque fortunæ suæ?*

224. What are the two divisions of the doctrine which teaches men how to raise and make their fortunes?

225. What are the chief precepts BACON gives for this purpose?

226. What general principle does he lay down with reference to what was said of AUGUSTUS CÆSAR and SEPTIMIUS SEVERUS?

227. In treating of Government, what does BACON say of the different attitude of mind in governor and governed?

228. What criticism does he pass upon those who had written upon Law?

229. What are his own suggestions to supply the deficiency he dwells upon?

230. By what argument does he show that THEOLOGY is based upon the word of God, and not upon the light of nature?

231. In what two senses is the expression, 'the light of nature,' used?

232. Show that the use of Reason in spiritual things is very great and general.

233. What is the twofold use?

234. Exemplify what BACON means by *Secondary Reason.*

235. What is the great defect he points out in treating of this subject? Into what two opposite errors do men fall with respect to it?

236. What are the two parts of THEOLOGY?

237. What advice does BACON give with reference to defining those points 'which do make men merely aliens and disincorporate from the Church of God?'

238. What were the two kinds of Scriptural interpretation he speaks of?

239 For what three objects did men pursue SCHOLASTIC THEOLOGY?

240. How does BACON dispose of them?

241. In what four points do the Scriptures differ as to authorship from other books?

242. To what faults have the expositions of Scripture by both modes of interpretation been liable?

243. What remarks does he make upon the efforts of men who attempted to find the truth of all NATURAL PHILOSOPHY in Scripture?

244. What lesson is deduced from the character of our LORD's answers at times to questions?

245. What does he say of the *literal sense* and the *moral sense?*

246. What judgment does BACON pass upon the state of Theology in his day? What suggestion does he offer to improve it and to render it *positive?*

247. What are the two kinds of *matter* belonging to THEOLOGY? How does he apply their consideration to Heathen religions?

248. What are the four main branches of THEOLOGY?

249. What does *Faith* treat of? Where is the doctrine concerning morals to be found? How is the Moral law divided? How does BACON classify sin with reference to the Trinity?

250. What does LITURGY or service embrace?

251. What is meant by the *Government of the Church?*

252. What are the three declensions from religion?

253. Explain the words *droumy, funambulo, imprese, lidger, pilosity, pensileness, rescussing.*

254. Explain the words *cumber, baladine, enucleate, puntos, blanch, addition, colliquation, divulsion, watch-candle.*

SPECIMENS OF EXAMINATION PAPERS.

(Univ. Local Exam.)

I.

1. What is the date of the work, and what was Bacon's position at the time? How does he describe his own plan in writing it? In what relation does it stand to any other of his works?

2. State Bacon's views as to the charges commonly brought against learning and learned men.

3. There are three 'limitations of knowledge,' mention them.

4. Enumerate the different kinds of History.

5. Draw out a list of 'the four Knowledges as to the body,' and 'the four Arts intellectual.'

6. Quote any three of the explanations which Bacon gives of famous proverbs.

7. Explain these words: *regiment, respective, compatible, continent, instance, maniable, morigeration, vermiculate, intensive, sortable, humanists, trencher-philosophers.*

8. Does Bacon say anything about learned kings?

II.

(Univ. Local Exam.)

1. You read in your author that the mind of man is 'like an enchanted glass,' and that 'knowledges are as pyramids.' What is meant by these statements? Where do they occur?

2. What does he call Idols of the tribe, and Idols of the cave?

3. How is the judgment affected by the imagination?

4. Give your author's remarks on the *summum bonum* and the ends of life. What are his arguments to show the superior happiness of the Practical to that of the Contemplative life?

5. What are final causes? To what branch of knowledge does the inquiry of them belong?

6. What are the contexts and meaning of the following:

Melior est finis orationis quam principium.
Scientiam dissimulando simulavit.
Solus Vespasianus mutatus in melius.
Faber quisque fortunæ propriæ.
Ante omnia, fili, custodi cor tuum.

7. Give BACON's interpretation of the fable of IXION. What are his views of the uses of Definitions, Commonplace Books, Biography? What is your author's enumeration of the *Arts Intellectual*, and what are his remarks on the wisdom of Tradition?

8. What does BACON say of the use of Reason in spiritual things, and what does he call the haven and Sabbath of all men's contemplations?

III.

(MILITARY EXAM.)

1. What was BACON's general purpose in writing the 'Advancement of Learning'? How is this work connected with the 'Novum Organon'?

2. Enumerate the three chief 'diseases' to which BACON says Learning is liable.

3. Into what branches does BACON subdivide *Divinity?*

4. Give some account of BACON's prose style and of his general mode of Argument in the 'Advancement of Learning.'

5. What examples does BACON give, in the first Book, of princes who favoured learning during their reigns?

6. How does BACON define POESY?

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